THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR OCTOBER 1859.

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TO READERS AND CORRESPONDENTS.

The following works have been received:—

Observations on the History, Pathology, and Treatment of Cancerous Diseases. By OLIVER PEMBERTON, Surgeon to the Birmingham General Hospital. London: John Churchill, 1858. (From the Author.)

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A System of Surgery: Pathological, Diagnostic, Therapeutic, and Operative. By SAMUEL D. GROSS, M. D., Professor of Surgery in Jefferson Medical College, etc. etc. etc. Illustrated by 936 engravings. In two volumes. Philadelphia: Blanchard & Lea, 1859. (From the Publishers.)

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A Practical Treatise on Enteric Fever, its Diagnosis and Treatment: being an Analysis of 130 consecutive Cases, derived from Private Practice, and embracing a Partial History of the Disease in Virginia. By James E. REEVES, M. D. Philadelphia: J. B. Lippincott & Co., 1859. (From the Publishers.)

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An Essay on Diphtheria, with Cases. By DAVID WOOSTER, M. D. San Francisco, 1859.

Obstetrical Notes, based on One Thousand Cases of Delivery. Read at the Annual Meeting of the Medico-Chirurgical Faculty of Maryland, in June, 1859, as the Report of the Committee on Midwifery. By WM. M. KEMP, M. D., of Baltimore, Md. (From the Author.)

Sundry Papers on Medical Education, &c. By CHARLES FISHBACK, M. D. Indianapolis, 1859.

An Essay on the Law of Muscular Action. By Louis Mackall, M. D. Washington, 1859.

Addresses delivered on the Occasion of the Dedication of the Hartford Hospital, in Hartford, Conn., on the 18th of April, 1859. Hartford, 1859.

Report of the Committee of the City Council of Charleston on the Origin and Diffusion of the Yellow Fever in Charleston in the Summer of 1858. Printed by order of Council. Charleston, 1858. (From J. B. Porter, M. D.)

Report exhibiting the Experience of the Mutual Life Insurance Company of New York for the fifteen years ending February 1, 1858. Printed by order of the Board of Trustees. New York, November, 1859. (From F. Winston, President of the Company.)

Report on the Smallpox in the City of Providence, from January to June, 1859. By Edwin M. Snow, M. D., Superintendent of Health. Providence, 1859. (From the Author.)

Seventh Annual Report of the Superintendent of the Hamilton County Lunatic Asylum, to the Board of County Commissioners, for the year ending June 5, 1859. Cincinnati, 1859.

The Present State of Microscopical Science, Medically considered. By Jno. H. Packard, M. D., of Philadelphia. Philadelphia: J. B. Lippincott & Co., 1859.

Introductory Address delivered at the Opening of the Medical Department of the University of the Pacific, at San Francisco, Cal., May 5, 1859. San Francisco, 1859.

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Seventeenth Annual Catalogue and Announcement of Lectures of the Rush Medical College, for the Session of 1859–'60. Chicago, 1859.

Annual Announcement of the Missouri Medical College, with the Valedictory Address of Prof. J. S. Moore to the Graduating Class. Session of 1859–'60. St. Louis, Mo.

Annual Announcement of the Medical College of Alabama, at Mobile. Mobile, 1859.

Annual Circular of the National Medical College, Washington, D. C. Session of 1859–'60. Washington, 1859.

The following Journals have been received:—

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Le Moniteur des Hôpitaux. Redacteur en chef: M. H. De Castelnau. July, August, 1859.

Le Moniteur des Sciences Médicales et Pharmaceutiques. Redacteur en chef, M. H. de Castelnau. September, 1859.

Journal de Médecine de Bordeaux. Redacteur en chef: M. Costes. April, May, June, August, 1859.

Journal de la Physiologie de l'Homme et des Animaux. Publié sous la direction du Docteur E. Brown-Séquard. April, 1859.

The British and Foreign Medico-Chirurgical Review. July, 1859.

The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. July, 1859.

The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. January to June, 1859.

The Retrospect of Medicine. Being a half-yearly Journal. Edited by W. Braithwaite, Lecturer on Obstetric Medicine. January to June, 1859.

Edinburgh Medical Journal. June, July, August, 1859.

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The Dublin Hospital Gazette. June, July, August, 1859.

The Indian Annals of Medical Science. January, 1859.

The Atlantis. A Register of Literature and Science. Conducted by Members of the Catholic University of Ireland. July, 1858; January, 1859.

Dublin Medical Press. July, August, September, 1859.

The Dublin Quarterly Journal of Medical Science. August, 1859.

Ophthalmic Hospital Reports. Edited by J. F. STREATFEILD. April, 1859.

The Boston Medical and Surgical Journal. Edited by W. W. MORLAND, M. D., and FRANCIS MINOT, M. D. July, August, September, 1859.

The New York Journal of Medicine. July, September, 1859.

The North American Medico-Chirurgical Review. Edited by S. D. GROSS, M. D., and T. G. RICHARDSON, M. D. July, September, 1859.

The New Orleans Medical News and Hospital Gazette. July, August, September, 1859.

Southern Medical and Surgical Journal. Edited by HENRY F. CAMPBELL, M. D., and ROBERT CAMPBELL, M. D. July, August, September, 1859.

The Virginia Medical Journal. Edited by JAS. B. MCCAW, M. D., and J. OTIS, M. D. July, August, September, 1859.

The New Orleans Medical and Surgical Journal, Edited by BENNET DOWLER, M. D. July, September, 1859.

The Medical Journal of North Carolina. Edited by EDWARD WARREN, M. D. June, 1859.

The Journal of Materia Medica and Pharmaceutic Formulary. Conducted by JOS. BATES, M. D., A. HUTCHINS, and H. A. TILDEN. June, July, August, 1859.

St. Louis Medical and Surgical Journal. Edited by M. L. LINTON, M. D., and W. M. MCPHEETERS, M. D. July, September, 1859.

Proceedings of the Academy of Natural Sciences of Philadelphia. June, July, August, 1859.

The Cincinnati Lancet and Observer. Edited by Drs. E. B. STEVENS and J. A. MURPHY. July, August, September, 1859.

The Peninsular and Independent Medical Journal. Edited by Drs. A. B. PALMER, MOSES GUNN, and Mr. F. STEARNS. July, August, September, 1859.

Semi-Monthly Medical News. Edited by Drs. S. M. BEMIS, and J. W. BENSON. July, August, September, 1859.

The American Journal of Dental Science. Edited by Drs. C. A. HARRIS and A. SNOWDEN PIGGOT. July, October, 1859.

The Ohio Medical and Surgical Journal. Edited by JOHN DAWSON, M. D., and J. W. HAMILTON, M. D. July, September, 1859.

The Medical and Surgical Reporter. Edited by S. W. BUTLER, M. D., and R. J. LEVIS, M. D. July, August, September, 1859.

The Chicago Medical Journal. Edited by DANIEL BRAINARD, M. D. July, August, 1859.

The American Journal of Science and Arts. Conducted by Professors B. SILLIMAN, B. SILLIMAN, Jr., and J. D. DANA. July, September, 1859.

American Journal of Pharmacy. Edited by WM. PROCTER, Jr. July, September, 1859.

New York Monthly Review of Medical and Surgical Science. Edited by AUSTIN FLINT, Jr., M. D. July, August, September, 1859.

The Pacific Medical and Surgical Journal. Edited by J. B. TRASK, M. D., and D. WOOSTER, M. D. May, June, July, August, 1859.

Oglethorpe Medical and Surgical Journal. Edited by Profs. BYRD, STEELE, and TALIAFERRO. June, August, 1859.

Nashville Journal of Medicine and Surgery. Edited by Drs. W. K. BOWLING, R. C. FOSTER, and GEO. S. BLACKIE. July, August, September, 1859.

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The American Medical Monthly. Edited by Drs. E. H. PARKER, J. H. DOUGLAS, and L. H. STEINER. July, August, 1859.

The New York Medical Press. Edited by Drs. J. L. KIERNAN and W. O'MEAGHER. July, August, September, 1859.

American Druggists' Circular, and Chemical Gazette. July, September, 1859.

The Nashville Monthly Record of Medical and Physical Science. Edited by DANIEL WRIGHT, M. D. July, August, 1859.

The Saint Joseph Journal of Medicine and Surgery. Edited by Drs. J. H. CRANE, O. B. KNODE, and G. C. CATLETT. July, September, 1859.

The Belmont Medical Journal. June, August, September, 1859.

The Savannah Journal of Medicine. Edited by JURIAH HARRIS, M. D., and R. D. ARNOLD, M. D. July, September, 1859.

Atlanta Medical and Surgical Journal. Edited by JOS. P. LOGAN, M. D., and W. F. WESTMORELAND, M. D. August, September, 1859.

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Cleveland Medical Gazette. Edited by GUSTAV. C. E. WEBER, M. D. August, September, 1859.

Charleston Medical Journal and Review. Edited by J. DICKSON BRUNS, M. D. July, September, 1859.

The American Journal of Insanity. Edited by the Medical Officers of the New York State Lunatic Asylum. July, 1859.

The Dental News Letter. Edited by J. D. WHITE, D. D. S., and J. R. McCURDY, D. D. S. July, 1859.

The Dental Cosmos. Edited by J. D. WHITE, D. D. S., J. H. McQUILLAN, D. D. S., and GEO. J. ZIEGLER, M. D. August, September, 1859.

The Dental Register of the West. Edited by J. TAFT and GEO. WATT. September, 1859.

The Western Law Monthly. Edited by CHESTER HAYDEN, LL. D. Cleveland, Ohio. August, 1859.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to ISAAC HAYS, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London;* or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

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The Hygienic Treatment of Pulmonary Consumption. By Benjamin W. Richardson, M. D., Licentiate of the Royal College of Physicians; Physician to the Royal Infirmary for Diseases of the Chest, and to the Margaret Street Dispensary for Consumption, etc. etc. London: John Churchill, 1857. 8vo. pp. 115. 437

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Epilepsy and other Convulsive Affections: their Pathology and Treatment. By Charles Bland Radcliffe, M. D., Physician to the Westminster Hospital, etc. Second edition, revised and enlarged. London, 1858. 12mo. pp. 383. 450

XIV. A Treatise on Gonorrhœa and Syphilis. By Silas Durkee, M. D., Fellow of the Massachusetts Medical Society, etc. etc. With eight colored plates. Boston: John P. Jewett & Co. Cleveland, Ohio: Henry P. B. Jewett. 1859. Octavo, pp. 431. 469

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2. Transactions of the Third Session of the Medical Society of the State of California, convened at San Francisco, February, 1858. 8vo. pp. 168.
3. Transactions of the Medical Society of the State of New York, for the year 1859. 8vo. pp. 454. 481

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XXI. Disorders of the Blood. By Julius Vogel, M. D., Professor of Clinical Medicine in the University of Giessen. Translated and edited by Chunder Coomar Dey, Graduate of the Medical College of Bengal. Calcutta, 1856. 8vo. pp. 219. 518

XXII. A Practical Treatise on Enteric Fever: its Diagnosis and Treatment. Being an Analysis of one hundred and thirty consecutive Cases, derived from Private Practice, and embracing a Partial History of the Disease in Virginia. By James E. Reeves, M. D. Philadelphia, J. B. Lippincott & Co., 1859. 8vo. pp. 199. 519

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ART. I.—*Contributions to Pathological Histology.* I. *On Suppuration in Cancerous Growths.* (Read before the Biological Department of the Academy of Natural Sciences of Philadelphia. March 21, 1859.)—II. *Remarks on the Anatomy of Five Cases of Non-Cancerous New Formations of Connective Tissue.* By J. J. WOODWARD, M. D., of Philadelphia.

I. *On Suppuration in Cancerous Growths.*—Fluids, resembling pus in external appearance, are frequently found in connection with carcinomatous growths. To the eye they present the most diversified aspect. Sometimes they are yellowish and creamy, like healthy pus; sometimes thinner, approaching the characters of sanies or ichor. Their anatomical relations to the growths in which they occur are variable. They may be contained in one or more cavities of greater or less size, or may be discharged from the surface of a cancerous ulcer.

Notwithstanding their outward aspect, however, these fluids are often quite distinct from pus in their essential nature, and the process by which they are formed is then altogether different from suppuration. Frequently, they are best described by the words *softened cancer matter;* a term applicable to many specimens which the most practised eye, unaided by the microscope, would be disposed to regard as laudable pus.

The morphological elements found in such cases are exceedingly diverse. The only forms discernible may be innumerable Aschersonian vesicles of variable size, with, perhaps, a few cholesterin plates, or crystals of the ammoniaco-magnesian phosphate; or, in addition to these forms, angular, granular nuclei, not unlike those of tubercle, may be observed in greater or less abundance, as, for example, in the case detailed by me in an article

entitled "Remarks on the Anatomy of a Case of Retrograde Cancer." (See *Am. Journ. Med. Sci.*, April, 1859.) Sometimes, also, besides the above forms, nuclei, and nucleated cells, of multiform configuration, variable size, and in a state of fatty degeneration, more or less complete, can be found.

As in soft cancer (medullary carcinoma) the anatomical elements are much more loosely held together than in hard (scirrhus), it might be anticipated that a much less degree of fatty degeneration would be necessary to reduce the texture to the purulent consistence in the cases belonging to the former category; and in fact observation demonstrates that the pseudo-pus found in connection with hard cancer most frequently presents merely Aschersonian vesicles or a few shrivelled nuclei, while in medullary it often contains the higher forms above enumerated.

The process by which such fluids as these are formed in cancer is simply *fatty degeneration*, a process always present in these growths, determined by certain momenta concerning which we are at present obliged to confess our ignorance, though this much at least may be positively stated, that it is not dependent upon such circulatory disturbance as would justify the use of the term inflammation.

But besides the formation of such pseudo-pus, a true suppuration may go on in cancers resulting in the formation of a genuine *pus* characterized by the usual morphological elements, and these may occur quite unmixed or variously mingled with the elements of softened cancer. I have as yet only observed this in connection with cancerous ulcers, as in the following case:—

CASE. *Cancer of the Left Breast extirpated at the Clinic of the University of Pennsylvania.* By Prof. HENRY H. SMITH, Wednesday, February 16, 1859.

History of the Case.—The patient was a robust, healthy looking Irish woman, 40 years of age; a widow, who during her married life had borne one healthy child. None of her relations, so far as she knew, had suffered from tumours of any kind.

The disease occupied the whole of the left breast, which formed a tumour about twice the size of the normal gland. This mass was hard, heavy, and somewhat adherent to the pectoral muscle. Several large ulcers of irregular shape were situated near the nipple, which was much retracted. The skin around these ulcers, to the distance of several inches, was thickened and tuberculated, of a florid red colour, and painful to the touch.

Besides the tumour, the patient presented no points of surgical interest. There was no enlargement of the lymphatic glands either of the axilla or neck; her menstruation was regular and had never given her trouble, and her general health was good.

She related that she had never noticed any tumour in the breast until about a year previously, when she had an attack of intermittent fever. During the paroxysms of the fever she suffered greatly from pain in the breast; and upon one occasion, putting her hand to it during a violent pain, she noticed that there was a hard, movable lump, about three quarters of an inch in diameter, imbedded in the substance of the gland.

After her recovery this lump continued gradually to increase in size, but without being the seat of severe pain, or causing any very serious inconvenience, until about two months before she came to the University. It then began to enlarge more rapidly than before; the skin became red and tender, the tumour was hot and exceedingly painful, and ulceration commenced.

After the commencement of the ulcerative process the tumour did not enlarge as rapidly as before, and was less painful.

At the time of the operation the ulcers were of some size and depth, with abrupt jagged edges, irregular in outline, and undermined at many points. The granulations were pale and unhealthy, and the sores discharged a thin pinkish yellow fluid, resembling unhealthy pus.

Prof. Smith excised this breast in the usual manner. On account, however, of the extent of the disease, so much of the integument was necessarily removed as to render it impossible to close the wound, which was, therefore, allowed to fill up by granulations.

Remarks on the history of the case.—The above history presents several points of interest. Especially would I call attention to the absence of any of the symptoms usually attributed to the so-called cancerous cachexia.

Notwithstanding the amount of evidence collected to show that widespread carcinomatous disease may exist for many years, without these symptoms, there are still many surgeons who invariably take the presence or absence of the cachexia into account in making their estimate of a case.

My own studies have compelled me to conclude that not only may cancer run its course, even to a fatal issue, without any peculiar symptoms deserving the name of cachectic, but that the absence of the symptoms of the cachexia is by no means a legitimate reason for making a favorable prognosis as to the probable duration of life in any case.

A robust, well-developed frame, good general health, and great powers of endurance are by no means incompatible with the most terrible progress of the carcinomatous affection, as evinced by a return of the disease a few weeks or months after the operation, with a rapid development of the secondary growths terminating in sloughing, hemorrhage, and speedy exhaustion of the vital powers. In illustration of these facts I would refer to the history of the old sailor, recorded in an article entitled "Remarks upon the Minute Anatomy of Three Cases of Cysto-Carcinoma," published by me in the *American Journal of Medical Sciences*, July, 1858.

It is a matter of interest to inquire how far the symptoms of the so-called cachexia, in the cases in which they exist, are dependent upon *cancerous infiltration of certain internal organs;* a question which I am not prepared to meet in detail in this place.

Another point of interest to which attention may be directed is the *side affected.* This tumour involved the left breast. In a single case this may be a matter of small moment, but it assumes interest when it is stated that *the left breast is most frequently* the *seat of the disease.* Thus, five mammary glands were extirpated by Prof. H. H. Smith, at the Clinic of

the University of Pennsylvania, during the session of 1858–9, the seat of the disease being in every case the left side. Four of these cases have been published by me in the January and April numbers of this journal. The fifth was a case of non-ulcerated scirrhus of the breast, which presented nothing remarkable. Three of these five breasts were undoubtedly cancerous; one was considered non-cancerous, and one doubtful. Inflammations of the breast have the same disposition as tumours to attack the left rather than the right breast. I believe it is generally admitted that mammary abscess is most frequent in the left breast. The full significance of these facts is undoubtedly not ascertained. At least, however, this much may be said, that in this particular, as in many others, cancerous growths follow the same general laws recognizable in other disorders.

Anatomy of the growth.—The growth, being incised from behind, presented the following conditions to the naked eye:—

The mammary gland was small, shrunken, and irregular in shape, and connected at the nipple with the thickened and diseased skin. Its cut surface was yellowish-white in colour, and yielded, when scraped, a creamy juice.

The skin, connected with the mammary gland as above stated at the nipple, was everywhere else separated from it by the healthy, abundant, adipose tissue in which the gland was imbedded. It was thoroughly diseased, being nodulated upon the external surface, and extending irregularly inwards between the groups of adipose cells. Its thickness varied much, amounting in many places to as much as three-quarters of an inch. Its cut surface closely resembled that of the diseased gland, and when scraped permitted a similar creamy juice to exude.

The external surface of the diseased skin, moreover, presented the *ulcers* described in the history of the case, the description of which need not here be repeated.

Careful study revealed the following minute conditions:—

The *creamy juice*, whether obtained by scraping the cut surface of the gland or of the thickened skin, exhibited the following morphological elements.

a. Free nuclei of great size (average diameter $\frac{1}{2000}$ of an inch). They were rounded, oval or rounded oblong in shape, and when examined without reagents, in the unaltered juice, or in the fluid of hydrocele, appeared to have colourless, transparent, or slightly granular contents.

The nucleoli, most frequently single, but occasionally double or plural, were of large size (about $\frac{1}{1000}$ of an inch), shining and spherical or rounded oblong in shape.

Water rendered the walls of the nuclei more distinct, and the contents dimly granular.

Acetic acid, rendering the walls still better defined, caused the contents to become so granular as to obscure somewhat the nucleoli.

b. Large irregular CELLS ($\frac{1}{1000}$ inch *average* length), of the most varied shape, oval, spindle-shaped, oblong, and irregular, with more or less granular contents, and one, two, or three nuclei identical with those above described.

These are the so-called "cancer-cells," and in this case answered well to the usual description. I have elsewhere (see *Am. Journal Med. Sci.* for January, 1859, article "On the Anatomical Diagnosis of Cancer") shown

my reasons for not regarding them as specific cells, but simply as distorted young connective tissue elements.

Water rendered these cells paler, at the same time that the nuclei became dimly granular, and their contents more distinct.

Acetic acid at first rendered both cells and nuclei exceedingly granular, but its more prolonged action ultimately rendered the cells pale, or caused them totally to disappear; while the nuclei remained distinct and granular, as in the case of the free nuclei above described.

c. A few delicate spindle-shaped cells, the ordinary embryonic elements of connective tissue.

d. Aschersonian vesicles in great number.

Thin sections cut from the diseased gland showed the same elements as those observed in the juice, lying, as usual, in a stroma of well-developed connective tissue.

Thin sections cut from the thickened skin exhibited similar conditions, the distended areolæ of the connective tissue of the cutis vera being thoroughly filled with the above described elements. Whether in the juice obtained by scraping, or in thin sections, the skin *afforded no elements which possibly could be confounded with the ordinary exudation corpuscle, or with pus.*

It may here be observed that the yellow elastic tissue appeared much more abundant in proportion to the white fibrin in the stroma of the cancerous skin, than in the stroma of the cancerous breast.

This fact, else utterly inexplicable, becomes at once clear when it is borne in mind that the stroma of a cancer often represents, to a certain extent at least, the pre-existing connective tissue of the part, and that the skin contains naturally much more yellow elastic tissue than the mammary gland, the fibres being not only more numerous but of greater diameter.

The surface of the ulcers in the skin yielded when gently scraped the purulent looking fluid described in the history of the case. In this fluid great numbers of *pus corpuscles* were observed. Some of them were misshapen and irregular, but the vast majority spherical, and indistinguishable from those found in the pus of a healthy wound or of an ordinary abscess.

They were spherical in shape, granular in appearance, and exhibited when treated with dilute acetic acid the usual single, double, triple, or quadruple nuclei.

Intermingled with these corpuscles, especially in the later scrapings, when the knife pressed rudely upon the surface of the granulations, were small numbers of all the morphological elements above described, as found in the creamy juice obtained by scraping the cut surfaces of the growth.

The granulations themselves consisted chiefly of the nuclei and cells above described at *a* and *b*, which in the deeper parts of the texture lay in the meshes of a stroma of connective tissue continuous with that of the whole growth.

Remarks on the anatomy of this growth.—It will be borne in mind that two months before this breast was removed, the patient was attacked with all the ordinary symptoms of inflammation in the tumour.

The redness of the skin, with the rapid enlargement of the growth following it, were indications of considerable circulatory disturbance, with consequent increased exudation. The heat and pain accompanying these

phenomena would have led any one, had the seat of the affection been in a normal tissue, to describe the condition as inflammation; and this judgment would have been confirmed by the subsequent ulceration.

If the discharge from these ulcers had been microscopically examined, this opinion would have been abundantly confirmed. The discharge in every essential particular was PUS.

If now inflammation be one separate and distinct process, and cancer formation another, as is ordinarily believed, the *à priori* expectation would be that careful investigation could recognize the characteristic elements of inflammatory exudations in the affected parts.

But instead, the most earnest and unprejudiced examination of the tumour, and especially of the thickened and diseased skin in which the inflammatory symptoms were most striking, discovered no exudation corpuscles, none of the ordinary anatomical conditions which it is customary to find in inflammatory exudates developing or developed into tissue, but *cancer structure* differing in no one essential particular from cancerous tissue formed under ordinary circumstances.

Nor, indeed, is the case unique in this particular. It has not escaped the careful eye of Rokitansky, that while in the majority of instances cancerous growths form slowly and insidiously, without vascular disturbance, without heat and redness, yet that in others the process occurs far more turbulently, and that the exudation takes place from congested and turgid bloodvessels, with the general external phenomena of inflammation. (See Rokitansky, *Path. Anat.*, Phila. edit., vol. i. p. 197.)

If, then, I should describe the process going on in the red and thickened skin of this patient, I would not call it inflammation in a cancerous growth, but turbulent or acute cancer formation. And if I should attempt to present in detail the minute conditions existing, I should say that the only essential difference between this and ordinary cancer formation lay in the quantity of blastema furnished, and the rapidity with which it was appropriated.

It is, moreover, to be observed that while this blastema was thus turbulently exuded from the bloodvessels of the skin, and organizing into cancer, a simultaneous exudation was going on from the vessels of the granulations in the cancerous ulcer, and this exudation was converted into PUS.

If these circumstances be rightfully considered, it appears to me that they are not without a certain degree of doctrinal significance. It is well known that the phenomena of cancer are very generally explained by describing it as a disease of the blood, stating that in consequence of the contamination of the circulatory fluid the exudation is peculiar, and that the special structural conditions resulting are the inevitable consequences of those peculiarities in the exudation which stamp it as the "cancer blastema."

To this humoral doctrine of cancer, which in one shape or another is

widely diffused among the physicians of the world, certain observed phenomena are inevitably antagonistic. And this antagonism deserves the more earnest consideration from unprejudiced men, because, as must be confessed at the outset, the humoral doctrine of cancer is strictly teleological in its origin, and has its foundation in an argument which even Rokitansky has confessed rests upon slender anatomical data. (*Loc. cit.*, pp. 298.) For all parties are, I believe, agreed that nothing special has been detected either morphologically or chemically in the blood of cancerous patients, or in the blastema of cancer, which agrees in every essential, so far as is known, with that of other new formations.

Among these antagonistic phenomena may, I think, be placed that just noted as occurring in the case under consideration.

We have here in a morbid growth the exudation of blastema occurring turbulently in connection with circulatory disturbance. A part of the blastema becomes cancer; a part becomes pus. If we explain the genesis of the cancerous structure by pronouncing it the inevitable manifestation of the inherent tendency of the blastema, how shall we account for the pus formation? If, however, taking into consideration that only the portion of blastema which was poured out into the living textures became cancer, while that escaping on the surface of the ulcer became pus, we attempt to account for the diverse destiny of the two portions by the diverse conditions to which they were submitted, we take the guiding force away from the blastema, and assign it to the local influences, and a purely humoral doctrine of cancer becomes no longer tenable.

Many other difficulties lie in the way of the reception of purely humoral doctrines, which it would be here out of place to state at large, since our business is chiefly with the phenomena and teachings of "suppuration in cancer." As an example of such difficulties, however, the fact of the rapid and healthy healing process which habitually occurs in the wounds made by the surgical removal of cancerous growths may be instanced.

It remains to be asked if there is any mode of regarding the phenomena of suppuration in cancer, by which they can be seen to harmonize with the other phenomena of cancerous and other growths?

It appears to me that this question may at once be answered in the affirmative, if we regard cancer from the new stand-point of its essential homology with the connective tissue new formations.

If cancer be a malformed new formation of connective tissue, and not a heterologous structure, as has so long been believed, we cannot be surprised that cancer formation should under certain circumstances be associated with other morbid formations, the relation of which to the pathological production of connective tissue is now fully recognized by the best pathologists.

There was a time when *pus* was considered a specific and peculiar product of disease, as cancer so generally now is. Ignorant of its anatomical

peculiarities, the earlier observers were driven to consider it as a special secretion from the inflamed parts. But it has been known for some years that whenever ordinary pathological connective tissue formation is checked at a certain stage, the spherical formative cells (exudation corpuscles) come to be what are called pus corpuscles; and a process of fatty degeneration, which affects chiefly the fluid blastema, converts the liquid into pus. This fact is tolerably described by certain authors, who speak of pus as a fatty degeneration of lymph, a mode of expression not broad enough to cover all the facts of the case, since the characters which render the semi-organized exudation *pus* are often stamped upon it from the earliest moments of its existence.

In investigating the conditions which determine pus formation out of an exudate instead of complete connective tissue production, it will be found that local influences play a very conspicuous part, and among these exposure of the exudate upon a free surface to the atmospheric air cannot be overlooked. Under ordinary circumstances pus is always formed, if *any* forms are produced in such fluids.

The relation of pus to *healthy* new formations of connective tissue is well known, and familiarly exemplified in the case of the granulating wound or ulcer.

It appears simply from the pointings of such cases as that above recorded, that a *similar relation may exist between pus and the distorted and diseased new formation of connective tissue, which we call cancer.*

With these few hints I dismiss the subject for the present; but as the study of suppuration in cancer appears to me to promise fruitful results, I trust to be able to recur to it hereafter.

II. *Remarks on the Anatomy of Five Cases of Non-cancerous New Formations of Connective Tissue.*—No subject presents greater interest to the student engaged in investigating the homologies of cancer, than the anatomy of those new formations, which, approximating cancerous growths in minute structure, differ essentially from them in their destiny and clinical history.

If Carl Wedl's doctrine of the homology of cancer with connective tissue be available, the study of non-cancerous new formations of connective tissue assumes fresh significance. This vast class of pathological formations, already important on account of their frequency, and the grave constitutional disturbance with which they are so often accompanied, demands from this stand-point new and unbiassed investigation.

Well worthy more attention than they have received for their own sake, they deserve fresh consideration as furnishing a key to the doctrinal significance of the famous group of so-called heterologous growths.

No other new formations compare in frequency with those of connective tissue; and none suggest at every step of their study more profound and

perplexing questions. Their infinite variety of aspect and origin has led observers, especially the earlier and more superficial, to classify them into numerous categories, each of which has unfortunately been elevated by many subsequent writers to the dignity of an independent and peculiar entity, an error which, like every attempt to set up distinctions where none exist in nature, has led to inevitable confusion.

There is apparently in these times but one way of escaping the labyrinth of intricacies in which the subject is involved in too many of the books, and that is never to lose sight of normal histogenesis while studying pathological growths. An intelligent study of pathological new formations of connective tissue only becomes possible after an earnest investigation of the development of normal connective tissue in the embryo. Whoever will give due consideration to these preparatory subjects, when he begins to observe the growths of this class which occur in disease, cannot fail to be struck with the unity of plan perceptible in the development of all. In fact, whether he observe the manifold developing products of acute and chronic inflammations, or those new formations, such as many indurations and tumours, which are evolved more slowly, without that evident circulatory disturbance which is regarded as characteristic of the inflammatory act; whether he look at those slowly produced and painless masses which, when once extirpated, never return, or consider the more formidable group of semi-malignant and malignant growths; he will, in every case, be able to satisfy himself that in all essential particulars, the pathological growth arises by a series of steps identical with the development of the normal tissue, and that all the diversity of external appearance observable can be accounted for on the supposition of exaggerated evolution on the one hand, and premature or excessive involution on the other.

The limited purpose of the present article will not permit the full elucidation of this large subject. It is only proposed to present a few considerations based upon the study of a limited number of cases of new formations belonging to this class, whose minute anatomy appears to throw some light on the homologies of cancer.

If the development of connective tissue in a pathological exudation took place in precisely the same manner as the same tissue is developed in the embryo—if no disturbing circumstances interfered with evolution till it was complete—if involution did not commence until development was accomplished, the perfected products of the process would be fully developed ADULT connective tissue, such as we find it in the normal anatomy of the body. We should be able to discriminate the well-developed bundles of white fibrous tissue, and intermixed with these more or less abundant yellow elastic fibres would probably be observed. Such is in fact, to select one of many examples, the tissue which forms the cicatrix of most wounds. It is developed out of the spherical granular cells (lymph cells—exudation corpuscles) which arise in the abundant liquor sanguinis (plastic lymph—

reparative exudation) poured out from the adjacent bloodvessels, by a chain of transitions which are step for step isomorphous with those by which the primitive cells of the embryo are metamorphosed into the same tissue. It frequently happens, however, in pathological new formations of connective tissue that although development commences according to the normal type, and does not essentially deviate from it so far as it goes, yet the process is not completed, the development is arrested, in a word *evolution is incomplete.*

The phenomena which result from incomplete evolution vary greatly in accordance with the stage of the process at which arrest of development takes place, and in accordance with several variable coincident circumstances. An illustrative example may be found in what often happens in the progress of the development of reparative materials. Cell-development may begin in the exuded liquor sanguinis, but the spherical cells resulting may never elongate. Development may be arrested at this stage, fatty degeneration of the nitrogenized ingredients of the exudation occur, coincident with this incomplete evolution, and, perhaps, determining it, and PUS is the result.

The process of *suppuration* is then in this case (and probably always) intimately allied to the pathological development of connective tissue.

I desire, moreover, in this place to lay great stress upon the fact that the incomplete evolution of the elementary forms of a new formation of connective tissue by no means necessitates the death of the developing exudation. The case of pus just cited might perhaps lead to this idea, if we looked no farther, but more thorough investigation will correct the erroneous impression. Indeed, putting the case of cancer, the homology of which with connective tissue is not generally admitted in this country, entirely out of the question, no intelligent minute anatomist can honestly study the vast class of benignant new formations of connective tissue, the homology of which is generally, if not universally admitted, however they may be disguised by pathologists under such names as fibro-plastic, fibro-cellular, recurring fibroid, &c. &c. &c., without being struck with the fact that growths constantly occur in which spindle-shaped and caudate cells, the ordinary embryonic forms of connective tissue, are at a maximum, and the fully developed fibrous elements at a minimum.

In some cases, in which the growth has occurred rapidly, and is still making progress, it is fair to suppose that had not the death of the patient, or the knife of the surgeon brought the specimen into the laboratory of the pathologist, development would have gone on to completion, and the perfected result of the process would have been a mass of well-formed fibrous tissue. But in other cases no such supposition is possible. The growth may have remained stationary, or may have increased in size but moderately during a period of *a number of years*, and yet minute investigation may show that all or most of the elementary forms are still in a

comparatively early stage of embryonic development. Such growths are often quite vascular—they are living tissues in every proper sense of the word, but besides their bloodvessels, the microscope exhibits in them no other elements than granules, free nuclei, and round, oval, spindle-shaped, or caudate nucleated cells. Between such growths and those in which fully developed connective tissue forms the chief or even the sole element, every possible transition may be observed, but I wish in this place chiefly to insist upon the frequent existence of growths which as to mere time are *old*, but which in the degree of development to which their elementary forms have attained, from the anatomical point of view, in a word, are *young*.

Any supposition as to the cause of this circumstance would, at the present time, be purely conjectural, and therefore unprofitable; but of the fact itself, there can be no doubt, and it justifies the general statement that the *development of the form elements in pathological connective tissue may be arrested at an embryonic stage without being necessarily accompanied by the death of the whole growth, or of the individual elementary forms*. Simple as this idea appears, and inevitably as it flows from the facts of the case, there are not wanting those who find it difficult of comprehension. The elements of a growth, say they, "which has been slowly growing for ten or fifteen years, can hardly be regarded as on a par with YOUNG connective tissue."

By myself at least, however, as the foregoing paragraphs will satisfy the reader, the term YOUNG connective tissue is used for brevity, to signify connective tissue, the elements of which are still in an undeveloped and embryonic stage; and as it is employed solely with reference to *degree of development* as determined wholly on *morphological data*, and not in any way with reference merely to time, as regarded apart from evolution, it follows that a new formation of connective tissue, the evolution of which is incomplete, may conveniently be called *young*, irrespective of the period of time for which it has existed.

I have especially insisted upon these facts in the biography of growths belonging to the category of connective tissue, and design to illustrate them by a few examples, on account of the light thrown from this point of view upon the question of the homologies of cancer, to which I have elsewhere briefly referred. ("Anat., Diagnosis of Cancer." *Am. Jour. Med. Soc.*, Jan. 1859.) If cancer is to be referred to the category of connective tissue growths, the supposition of arrested development at various stages in the embryonic forms becomes, among other influencing circumstances, absolutely essential to account for the variety of form among the elements which has been so much insisted upon, among modern observers, in justification of that favoured notion of heterology which has been handed down from a period antecedent to the origin of pathological histology.

It would appear to me that any objection to the reception of this doctrine on the ground that it supposed an *undemonstrated* possibility in order

to be able to account for the phenomena observed, is at once overturned if it be shown that a similar irregular arrest of development may occur in growths the homology of which is on every side acknowledged, and the question of the homology of cancer becomes then, as it should properly be, *a purely morphological question, depending for its ultimate solution solely upon anatomical investigation.*

In this respect it differs widely from the *pathology* of cancer. Large ideas of the pathology of any disease, are quite beyond the reach of the *mere* morbid anatomist. Clinical history here becomes important, for *it often happens that new formations, anatomically the most similar, are accompanied by the most diverse phenomena.* But the question of the homology or heterology of any new formation, is a purely structural one, upon which clinical history throws no light.

With these brief preliminary remarks, I proceed at once to the discussion of the cases referred to :—

CASE I. *Small Subcutaneous Tumour of the Eyebrow. History of the Case.*—A young gentleman of good general health and temperate habits, presented himself to me in the summer of 1857 with a tumour, the size of a large pea on the outer part of the left eyebrow, which had been growing for several years. It was not painful, and the skin covering it was healthy. Notwithstanding its apparent hardness, it was believed by me, prior to the operation, to be a sebaceous cyst; for such cysts, when of small size, are often exceedingly firm, and communicate to the touch a sense of solidity which is sometimes quite deceptive. The tumour was removed through a single straight incision, and the patient has not been troubled by any return of the disease.

Anatomy of the growth.—When a section of the little tumour was made, it was found to be solid throughout, resisting to the knife, and presenting an opaque grayish-white surface. It was enveloped with a distinct vascular capsule, which everywhere separated it from, and at the same time connected it with, the surrounding subcutaneous adipose tissue. The cut surface, when scraped, yielded no creamy juice, but a small quantity of a colourless liquid exuded in which minute fragments could be discerned with the naked eye.

The following minute conditions were observed: The vascular capsule was composed of connective tissue in which the white fibrous element was especially well developed. Fully formed bundles of white fibrous tissue interlaced together, constituted in fact the chief part of the capsule; but with these were associated a small number of cells and nuclei similar to those about to be described.

The substance of the tumour, as examined by teasing or by scraping, was found to present no fibres, but to be wholly composed of granules, nuclei, and nucleated cells.

The free nuclei were exceedingly abundant, even more so than the cells. They were sometimes collected together in considerable masses, in which but few cells could be found. In shape they varied greatly; some were round, some oval, some oblong, others quite irregular. Their contents were clear or dimly granular, and they contained generally one or two, but sometimes several point-like nucleoli. Their size varied greatly, the largest presenting a diameter of $\frac{1}{3500}$ of an inch.

The cells, which were rather more granular in appearance than the nuclei, were of the most various shapes—round, oval, caudate, and elongating into fibres. Many of them were more or less angular, apparently deformed from mutual pressure. Each contained but one nucleus, no cell with two or more nuclei being observed. The largest of the rounded oval or angular forms, did not exceed $\frac{1}{1500}$ of an inch in long diameter.

Remarks.—The diagnosis, based upon the above condition, was that the growth belonged to the class of innocent new formations of connective tissue.

In several points the anatomy of this tumour presented a note-worthy similitude to that of cancerous tumours. As, for example, in the *abundance of free nuclei.* This fact is of the greater interest, as abundant free nuclei have been especially insisted upon as among the characteristics of malignant growths. In many innocent tumours, however, they occur quite as abundantly. This fact has not escaped the observation of some of the best of those pathologists who regard cancer as heterologous.

Thus Mr. Paget, in describing his class of "fibro-cellular tumours," which belong properly to the category of immature connective tissue, and of which he asserts (*Surg. Pathol.*, pp. 384) that their homology is "as perfect as that of the fatty tumours," says (*loc. cit.*, p. 383): "In many instances abundant nuclei appear among the filaments, or imbedded in the more homogeneous substance."

So also the same excellent observer describes and figures abundant free nuclei in his class of "recurring fibroid tumours," and the very name of what both he and Bennett call the "fibro-nucleated tumours," indicates a similar condition still more remarkable in degree. Both the "recurring fibroid" of Paget, and the "fibro-nucleated tumour" of Bennett, belong in fact to the same category of immature connective tissue, as indeed Mr. Paget himself has well indicated in the commencement of his 26th lecture, in which he says of these two classes, that "their component structures resemble those that are rudimental of the fibrous tissue."

Free nuclei will be described in connection with the anatomy of every case recorded in this paper, and their anatomical significance will be discussed in a subsequent paragraph.

The free nuclei in this case, as will be seen from the description, are quite like the free nuclei ordinarily observed in cancers, except in point of size, and in the size of the nucleolus. The nuclei of cancer are much larger than those above described, and have much larger nucleoli, a diversity which it will be perceived is essentially one of SIZE.

Another point in which similitude to cancer may be observed is in the *diversity of the degree of development*, to be noticed in the elementary forms. A diversity which, aided by the variation of shape, evidently produced in many of the cells by mutual pressure, begot almost as great a variety in the shape of the cells as is observable in cancer itself.

Notwithstanding these similitudes, however, this growth would never have been confounded with a fully developed cancer, from the cellular elements of which those above described would be distinguished by the smaller size, both of the cells and nuclei. Especially would those who look upon the cells of cancer as specific elements insist upon the smaller proportional size of the nuclei to the cells, and of the nucleoli to the nuclei. For myself, I am not disposed to insist too vehemently upon characters which are based essentially upon minute difference of size, but especially note the absence of anything like fatty degeneration in any part of the growth, which, taken in connection with the distinct vascular capsule, and the slow progress made by the growth in acquiring the small size it possessed, would appear to remove it from the category of cancer.

I may remark, in passing, that, besides its connection with the question of homology, this case possesses a certain degree of interest of its own.

In fact, small tumours, similar in all essential anatomical conditions to the above, are not unfrequently found beneath the skin in various parts of the body. The most interesting points in the history of the cases to which I refer, are the following: that these tumours, though slowly increasing in size, sometimes for a period of many years, seldom, when at the largest, exceed half an inch in diameter; that a number of them frequently occur at various points about the same individual, appearing sometimes simultaneously, but sometimes consecutively, the appearance of the first being followed by a considerable interval before others begin to grow; and, finally, the facts that, while some of them are perfectly painless, and not sensitive when pressed upon, others of the same structure are tender when handled, and some are the constant seat of considerable pain.

The latter cases belong to what has been designated as the class of painful subcutaneous tumours, a group of tumours which possess nothing in common but the painful sensations of which they are the seat. For myself, until I overlook the fact that tumours of *any* anatomy, and of *any* pathological significance, may be, in accordance with circumstances, which are not at present understood, either painful or painless, I shall be unable to see the propriety of dividing into separate categories tumours essentially the same in their anatomical structure, or of associating into a single category growths of unlike anatomy, merely on account of the presence or absence of *pain* as a symptom. The latter error has been committed in the case of the "painful subcutaneous tumours." For while, as Mr. Paget (*loc. cit.*, pp. 392) has correctly shown, most of the cases described under this head are examples of "fibro-cellular or fibrous tissue, in either a rudimental or a perfect state," that is, of more or less completely developed connective tissue, other cases, as Mr. Paget also mentions, which have been described under this head, are composed of fibro-cartilage, and belong, therefore, to the category of new formations of cartilage. But, while unable to see the propriety of erecting these tumours into a separate class, I am not inclined to

overlook the importance of drawing attention to the fact that *innocent* tumours, of small size, and various anatomy may be the seat of pains quite as severe as are ever seated in malignant growths. The following case is the history of a tumour which would doubtless be classified by most pathologists with the painful subcutaneous.

CASE II. *Small Subcutaneous Tumour in the Shoulder of a Young Negro Woman.* Removed by Dr. C. S. BISHOP, of Philadelphia. *History of the Case.*—This tumour was about the size of a small pea. It was firmly adherent to the skin, and seemed imbedded in it, but was not adherent to the subjacent tissues. It was the seat of exquisite paroxysmal pains. The patient was a young unmarried negro woman, nineteen years of age, in good health, and menstruating regularly. She had first noticed it a year previously. The tumour was removed by Dr. Bishop in March, 1859. The wound healed kindly. Two similar tumours appeared beneath the skin of the back about a month afterwards, at some distance from each other, and from the seat of the original tumour. They are at the present time still much smaller than the original tumour, and are not painful.

Anatomy of the growth.—This tumour was seated in the corium, and extended slightly into the subcutaneous adipose tissue. It was not abruptly defined from the sound skin on either side, and was not enveloped in any distinct cyst or capsule. When a section was made, the cut surface presented an opaque yellowish-white colour. No *creamy* juice exuded on scraping, but a colorless fluid was obtained, slightly turbid, from the presence of a number of minute fragments of tissue torn away by the instrument.

The following minute conditions were observed: Careful examination of the turbid fluid obtained by scraping exhibited the presence of granules, free nuclei, and cells, besides which, small fragments of well-developed white fibrous and yellow elastic tissue were observed.

The free nuclei were rounded, oval, or slightly irregular, with clear, pellucid contents, and one or two small-sized nucleoli. In their long diameter they varied from $\frac{1}{1600}$ to $\frac{1}{3000}$ of an inch, the average, perhaps, closely approximating $\frac{1}{2500}$ of an inch. These, though abundant, were not, however, quite as numerous as in the last case.

The cells were most of them oval, elongated, or spindle-shaped, and clearly transitional to fibres. But some of them presented shapes of such irregularity as legitimately suggested the idea of modification from mutual pressure. Such cells were more or less triangular or polygonal, and in outline were not unlike the most characteristic forms of well-developed cancers. Each of the cells contained a single rounded or oval nucleus, similar in all respects to the free nuclei above described.

The cell contents were dimly granular, but no minute oil drops were observed in any of them.

The long diameter of the cells varied greatly in accordance with their shape; the longest of the spindle-shaped elements attained a length of $\frac{1}{300}$ of an inch.

The irregular triangular or polygonal cells, above mentioned as analogous in shape to the elements commonly considered characteristic of cancer, ranged from $\frac{1}{1000}$ to $\frac{1}{2000}$ of an inch in diameter.

When thin sections of the growth were carefully studied, they showed that these embryonic elements lay in a firm fibrous stroma, in which, in

addition to white fibrous tissue, the action of acetic acid demonstrated the presence of abundant stout and curly yellow elastic fibres.

Remarks.—All that was said in the remarks on the last case with regard to the resemblance of some of the elements there described to the elements of cancer, applies here with redoubled force, inasmuch, in this case, many of the nuclei and cells had attained dimensions quite equal to the average of cancer elements. The same abundance of free nuclei was also observable, though in a less degree: and the same irregularity in the degree of development to which the cell forms had attained. Moreover, the likeness of the anatomical conditions to cancer is yet further increased by the absence of any distinct cyst or sac, limiting the growth from the surrounding parts.

Yet, nevertheless, I cannot regard this little tumour as a cancer. The general tendency of the forms of the majority of the elements, the absence of fatty degeneration in any part of a growth at least a year old, and the small size attained by the tumour in the time it had been growing, appeared to me, when taken together, to exclude all possibility of entertaining any such idea. I therefore regard it as belonging to the category of innocent new formations of connective tissue. The occurrence, subsequently to the operation, of two similar little growths in different parts of the skin of the same patient, does not appear to me to conflict with this view, since, as was remarked in connection with the last case, a number of little growths of this kind frequently occur at various points on the same patient, often making their appearance at different times. It will, of course, be understood that in such a case the removal, by local measures, of the first of a series of growths could in no way prevent the appearance of the others at a subsequent time.

I may also remark, before passing from this case, that it was carefully examined by me, with regard to any nervous connection which might account for the severe pain, of which it was the seat. I was unsuccessful in this search. Mr. Paget records a similar want of success on his own part in all but *one* of the "painful subcutaneous tumours" examined by him.

For myself, I am too well aware of the great practical difficulties attending the investigation of the distribution of the more minute terminal branches of the nerves, as, for example, in the papillæ of the skin, or of the tongue, to attach any great importance to such negative results as these. That no nerves should be observed, even by careful dissection under the microscope, only proves the absence of any trunk of noteworthy size. It is only after the action of appropriate reagents, and the careful examinations of a series of thin sections, which should embrace the totality of the little tumour, that the absence of nervous filaments from the parts immediately connected with the growth could be established. Surely, all growths, whether painful or not, which are seated in a tissue, as thoroughly supplied

with nerves as the skin, must be brought into the closest relation with the nerves of the adjacent sound tissues.

Nevertheless, admitting a well-authenticated nervous communication to exist with every painful growth of this class, we shall be still unable completely to account for the pain, of which they are the seat, in view of the fact that the most distinct connection between a tumour and a nerve may exist, or a tumour may be evidently seated within the *sheath* of a nerve, and yet may never have caused the slightest pain.[1]

The causes of the pain, of which these tumours may be the seat, is then quite as unexplained as that of the pain accompanying any of the other varieties of disordered nutrition, and probably depends upon similar conditions. Indeed, it must be admitted, however reluctantly, that any form of disordered nutrition may, or may not, be accompanied by pain, and that we are quite unable to lay down any noteworthy condition as occurring in the one class of cases, which does not also occur in the other.

The two cases next to be described are tumours of greater size, both of which present so many points in common, that for the sake of brevity, after detailing the history of each case, the anatomy of the two may be described together.

CASE III. *Tumour of the Back of a Man;* and CASE IV. *One of the Back of the Neck of a Woman.* Both removed by Prof. H. H. SMITH, at the Surgical clinic of the University of Pennsylvania.

History of Case III.—The patient in this case was a robust, healthy looking German, 37 years of age, and the tumour, which was exceedingly firm, about the size of a large walnut, and situated near the angle of the ninth rib, was not painful, and was quite movable beneath the skin. The skin covering it was healthy in appearance, and not adherent.

The patient attributed it to a blow received about a year previously. Subsequently the tumour was observed, and it has steadily increased in size.

This tumour was removed by Prof. Smith, Nov. 10th, 1858, and kindly handed to me for study.

The patient speedily recovered from the effects of the operation, and has not returned to the University since the wound cicatrized.

History of Case IV.—The patient in this case was a healthy young woman, 31 years of age. At the time when the tumour began to grow (a little over a year previously) she was single, but had since married. She did not remember any blow, or other injury, at the seat of the growth. The tumour was movable, but not freely so. It was occasionally painful. The skin covering it was healthy in appearance, and not adherent to it. Its density was greater than that of a fatty tumour, but less than that of the common fibrous tumour. Its size was about that of a hen's egg. Prof. Smith removed this growth May 25th, 1859. During the dissection, it was found to be firmly adherent to the tendon of the trapezius muscle. The wound healed kindly, and the patient has since remained well.

[1] See Paget, loc. cit., p. 395. "Tumors that are evidently within nerves are not always, nor even usually, painful."

Anatomy of these growths.—In each of the above cases the tumour was enveloped in a vascular sac or cyst of dense, well-developed connective tissue. In both, the texture was moderately firm, but not tough under the knife. The appearances presented on bisecting the growth with a scalpel, were somewhat different in the two cases. In Case III., the growth was composed of three distinct lobules, separated from each other by processes of the investing capsule. The section was yellowish and semi-transparent, and yielded, to pressure, an abundant albuminous liquid. The tumour in Case IV. was not lobulated; its colour was pearly gray, and its texture fibrous looking. Certain spots were more transparent and gelatinous in aspect than the rest of its substance. In both cases, scraping or teasing displayed the following minute elements. (No creamy-looking juice was present:)—

Free nuclei were moderately abundant. They were generally oval or rounded-oblong, with pellucid or dimly granular contents, and one or two quite large nucleoli. Their long diameter varied from $\frac{1}{2600}$ to $\frac{1}{1800}$ of an inch.

The cells, which invariably contained but one nucleus, were generally oval, or more or less spindle-shaped, and varied in length from $\frac{1}{1000}$ to $\frac{1}{260}$ of an inch. Of these, the substance of the longest was often distinctly fibrillated, as in the ordinary development of white fibrous bundles from cells. Besides these more usual forms, however, as in the elements of Case II., cells were observed more or less distorted, as if by mutual pressure. Some of these elements were quite remarkable, with nuclei from $\frac{1}{2600}$ to $\frac{1}{1800}$ of an inch in length, and the cells themselves often measuring $\frac{1}{1000}$ to $\frac{1}{700}$ of an inch in long diameter. Except in their less granular character, and the absence of evidences of fatty degeneration, the resemblance of these cells to certain of the so-called cancer-cells was quite remarkable.

Besides these, white fibrous bundles, and fibrils, were more or less abundantly detected.

The areolar plan of arrangement was demonstrated by thin sections.

Remarks.—The two tumours above described belong to Paget's class or group of "fibro cellular tumours." They are, in fact, like Cases I. and II., new formations of connective tissue, in which development is still in an embryonic stage. Both belong to the category of innocent growths. In fact, I should not have described them in this place, so well do they correspond with what Mr. Paget has ably described, were it not for the existence of the distorted elements above alluded to, the significance of which will be discussed in the sequel.

Distorted connective tissue elements are also to be met with sometimes in inflammatory exudations, as the following case illustrates:—

CASE V. *Chronic Inflammation of the Elbow-Joint.* Resected by Dr. D. H. AGNEW, at the Clinic of the Philada. Hospital, Blockley. *History of the Case.*—This patient was a coloured boy, thirteen years of age, and of apparently good constitution. He had injured the joint two years previously, shortly after which it became painful, inflamed, and finally an abscess formed, communicating with the joint, and discharging by several sinuses. At the time of the operation, the joint had become partially anchylosed, and the sinuses were still discharging. In the treatment of this condition, Dr. Agnew resected the elbow-joint early in March, 1859. A

full description of this case and of the operation, will be found reported by Dr. T. L. Taylor, of the Philadelphia Hospital, Blockley, in *The Medical and Surgical Reporter*, for April 2, 1859.

In this operation, the entire articulating extremity of the humerus, the ulna as far as the coronoid process, and the radius as far down as the tubercle, were removed, all being much diseased. The synovial membrane was much thickened, and a quantity of pus, and of a brain-like matter, was found in the cavity of the joint.

Through the kindness of Dr. Agnew, an opportunity was afforded me to study these parts.

The pus presented nothing peculiar.

The brain-like matter, pulpy, and of a pinkish cream colour, was not unlike the substance of some encephaloid cancers in its external appearances. Carefully studied, it presented the following elements:—

(*a.*) Fragments of connective tissue bundles, and of elastic fibres. These I judge not of new formation, but derived from the broken-down fibrous tissues about the joint.

(*b.*) Pus cells.

(*c.*) *Numerous free nuclei*, of considerable size, $\frac{1}{3500}$ to $\frac{1}{1430}$ of an inch. Of these, the largest sized were perhaps more abundant than the small. These nuclei were, generally, rounded or oval, but sometimes oblong and irregular. Their contents were clear or dimly granular, and they each contained one or two distinct nucleoli.

(*d.*) MANY CELLS, of which some were variously spindle-shaped, and quite like the forms usually seen in developing connective tissue. But others distorted, being more or less triangular or polygonal. The latter measured from $\frac{1}{500}$ to $\frac{1}{300}$ of an inch in length, but were narrower than is usual with the typical cancer-cells. Their contents were granular, and each contained a single nucleus.

The nuclei within cells, it is worthy of note, were generally much smaller than the larger free nuclei—never exceeding $\frac{1}{3300}$ to $\frac{1}{2500}$ of an inch in diameter.

In the article referred to in *The Medical and Surgical Reporter*, will be found a wood cut, from a drawing furnished by me to Dr. Agnew, which fairly represents the above conditions.

Remarks.—The brain-like matter, whose morphological conditions have been just described, is evidently to be interpreted as organizing lymph, in which the local conditions have interfered with the developmental processes. A part at least of the exudation into this joint, attained but imperfect development. Arrested at that stage of evolution in which its cells were still spherical, its elements became pus cells, and it became pus. A part, however, of the developing forms in another part of the exudation have attained a higher stage, and while some have continued in the normal development path, a part have become variously distorted and deformed. In fact, these distorted elements present much analogy to cancer-cells, from which they differ chiefly in the smaller size of the nucleus.

Still stronger was the resemblance of the free nuclei to free nuclei found in cancers, in size, in shape, in appearance. I cannot believe that any microscopist would be justified in affirming from the study of these alone whether they were derived from cancer or not.

Critical remarks suggested by a review of the anatomy of these five cases.—It is not my purpose in the present article to enter into a full discussion as to the homologies of cancer. On the contrary, I shall limit myself almost exclusively to the elucidation of the two following propositions.

Proposition 1. No essential differences of structure exist between the so-called "cancer nuclei" and the so-called "fibro-plastic nuclei," between the typical forms of which every possible transition may be observed in different tumours, and sometimes in the same tumour.

Proposition 2. The same statement is correct with regard to the so-called "cancer cell," and the "fibro-plastic cell."

First with regard to the *nuclei.*

I do not pretend to assert that no difference of appearance can be discovered by the practiced anatomist, between the majority of the nuclei of a well-developed ordinary cancer, and those of an ordinary developing inflammatory exudation, or of the larger number of benignant new formations of connective tissue. Yet even here we should be misled, did we suppose that the diversity was otherwise than a difference of *degree* in characters possessed by both alike.

The characters upon which the advocates of special cancer nuclei have most relied are these.

(*a.*) *The greater size of the cancer nuclei.*—Thus it is generaliy stated that cancer nuclei are from $\frac{1}{2500}$ of an inch and upwards, while in innocent connective tissue formations the nuclei ("fibro-plastic nuclei") are from $\frac{1}{2500}$ of an inch and under; this magnitude, $\frac{1}{2500}$ of an inch, being the minimum for cancerous, and the maximum for fibro-plastic nuclei. Some little diversity as to the exact fraction exists, but all the statements approximate the above sufficiently closely.

(*b.*) *The difference in shape.*—The "fibro-plastic nuclei" are described as "oat shaped" or ellipsoidal; the "cancer nuclei" as ellipsoidal, oval, or spherical. Much confusion exists among different writers in the nomenclature by which these differences of shape are indicated, and there are few terms applied to nuclei of the one class which have not been bestowed by other authors upon those of the other. I may remark, however, that the diversity of shape which I have been able to make out between the typical cancer nuclei and the best marked nuclei of innocent connective tissue appears to consist essentially in the greater proportional *length* as compared with the *breadth* of the latter nuclei, while in cancer nuclei the breadth more nearly approximates to the length. Deformed nuclei, oblong, angular or irregular, I have met quite as often in innocent formations as in cancer.

(*c.*) *The greater size of the nucleoli* has also been insisted upon. "Its vesicular character" as contra-distinguished from the mere *dot* which constitutes the nucleolus of the nuclei of innocent growths, is an important diagnostic character. (Laurence, *Diag. Surg. Cancer*, p. 89, note.) Plural

nucleoli are generally admitted as occurring alike in "cancer" and "fibro-plastic nuclei."

The above characters are those which have been chiefly insisted upon, and were they constant they would be conclusive, not, perhaps, in distinguishing "cancer nuclei" as heterologous elements, but in diagnosing between them and "the fibro-plastic nuclei," and, indeed, great stress has been laid upon these characters by the heterologists. Thus, Mr. Paget (*Surg. Path.*, p. 497, Am. ed.) says: "The nuclei in hard cancers are more constant in their appearances than the cells, and I think even more characteristic. They are always comparatively large, having an average long diameter of about $\frac{1}{2500}$ of an inch, and varying from this size much less than the cells do from theirs. They are regular, oval, or nearly round, clear, well-defined, scarcely altered by commencing decomposition, or by water, or any moderately diluted test substance."

"Each nucleus has one, two, or rarely more nucleoli, which, like itself, are large in comparison with the ordinary proportion between nucleoli and cells, and are peculiarly bright and well defined."

Yet notwithstanding the confidence with which many still rest on the above descriptions, notwithstanding my own free admission that the characters above indicated as belonging to the "cancer nuclei" are correct for the larger number of the nuclei in the majority of cases of well developed cancers, and that the characters assigned to the "fibro-plastic nuclei" are correct for the majority of the nuclei of most benignant connective tissue formations, my observations compel me to express my belief that no characters as yet observed in the nuclei alone are absolutely distinctive. Two striking facts, as to which the tumours I have hitherto examined, speak equally plainly, prevent any belief in the specificity of the alleged diversities. First, free nuclei having all the characters above assigned to "cancer nuclei," may frequently be observed in growths, the total anatomy of which, as well as their clinical history will not permit them to be placed in the category of cancer; and, secondly, free nuclei having all the alleged characters of "fibro-plastic nuclei," are constantly encountered in growths whose general anatomy, as well as their clinical history, render their cancerous character only too positive.

The first of these facts is well illustrated by the minute anatomy of the little series of new formations described in this paper. Thus, for example, in Case V., we are not concerned with any tumour, but with a chronic inflammatory process; the general anatomy of the new formations, and the history of the case render it clear that the elements are those of ordinary developing inflammatory exudations, modified, perhaps, somewhat by the chronic character of the process; yet here we find free nuclei as large and distinct as are to be encountered in the great majority of well-pronounced cancers. Indeed, when I compare the carefully made drawings of these nuclei in my atlas, with the drawings of cancer nuclei which I possess, I am constrained

to admit that the largest of them present the so-called cancerous characteristics in as high a degree as the best marked of those I can find in most of my sketches. Thus, in respect to size, it will be observed that these nuclei are recorded as varying in different individual instances from $\frac{1}{3500}$ to $\frac{1}{1430}$ of an inch in long diameter, and it is remarked (*see* Case V.) that "of these, the larger sized were, perhaps, more abundant than the small," while, therefore, at the smaller end of the chain these nuclei are quite within the size assigned to "fibro-plastic nuclei," at the larger they have attained a bulk which is gigantic. I possess no drawings of free cancer nuclei which exceed these in bulk; on the contrary, while I have frequently encountered in cancers both free nuclei and nuclei contained in cells, fully equal in size, in other cases in which the cancerous nature of the disease was equally indisputable, the largest nuclei were of a far inferior bulk. Thus in an unpublished case of cancer of the stomach and pancreas of which I possess notes and drawings, the largest of the free nuclei did not exceed $\frac{1}{2500}$ of an inch, while the smallest measured was $\frac{1}{3500}$ of an inch in long diameter. Nor, if from size we turn to the consideration of shape shall we find the characters usually assigned to the cancer nuclei to be wanting; in shape "these nuclei were generally rounded or oval, but sometimes oblong and irregular." If we compare the transverse with the long diameter, we shall find that as in cancer, all grades exist between nuclei almost spherical, and those in which the long diameter is fully double the transverse. In appearance, these nuclei, like those of most cancers, were "clear or dimly granular, and they each contained one or two distinct nucleoli." As to the size of the nucleoli in these nuclei it is certainly not so great as the nucleoli I have sometimes seen in cancer, yet it was sufficiently noteworthy, $\frac{1}{1500}$ of an inch being, perhaps, the average size. These nucleoli, however, are exceeded in size by those of Cases III. and IV., some of which I measured as large as $\frac{1}{1000}$ of an inch. Frankly do I acknowledge that the nucleoli of cancer frequently attain a greater size, having measured them as large as $\frac{1}{800}$ and even $\frac{1}{600}$ of an inch; but at the same time in the majority of the cancers of the minute anatomy of which I have made drawings, the nucleoli do not exceed $\frac{1}{1000}$ of an inch. Often have I seen them in the free nuclei of undoubted cancers mere "dots" the $\frac{1}{2000}$ of an inch in diameter, like the nucleoli assigned to the typical "fibro-plastic nuclei." In almost every cancer may be met here and there a few free as well as cell-inclosed nuclei, in which it is difficult, if not impossible to recognize the existence of any nucleoli at all, and in one specimen which I examined almost immediately after its removal from the body, this character held good for the majority of the nuclei. These statements it would appear sufficiently justify the assertion above made, that free nuclei having all the characters usually assigned to "cancer nuclei, may be observed in non-cancerous growths of connective tissue. The converse assertion was that free nuclei, having all the alleged characters of "fibro-

plastic nuclei," are constantly encountered in growths undoubtedly cancerous. The existence of "fibro-plastic cells" (symmetrical elements of developing connective tissue) among the "cancer cells" (distorted elements of developing connective tissue) of cancerous growths has been recognized by several writers, and I have myself had repeated opportunities of observing the correctness of the notion. As, however, the characters of the "fibro-plastic cell" are based, among other points, upon the character of its nucleus, it legitimately results, that if "fibro-plastic cells" are to be observed frequently in cancer, "fibro-plastic nuclei" cell-inclosed, are also to be found. But besides these the statement is now to be made, that free nuclei, indistinguishable from these in all their characters except their freedom, are yet more abundant. Indeed, my own experience and drawings will sustain me if I state that the majority of cancers contain among their larger free nuclei many smaller than the $\frac{1}{2500}$ of an inch in diameter, and that of these smaller nuclei, a very large number could not be discriminated from the typical fibro-plastic by any anatomist who looked at their individual characters alone, rejecting the study of the other elements with which they are found associated.

These remarks will, it seems to me, pave the way for the reception of the first proposition; but if to these we add a thoughtful survey of the free nuclei observed in the five cases recorded, the truth of the proposition appears as firmly established as any general proposition can be upon so small a number of cases.

In every one of these five cases of non-cancerous formations abundant free nuclei were observed, in shape, in the number of nucleoli, and in the appearance of the contents, the nuclei in all the cases resembled each other closely; they differed, however, in size, and in the size of the nucleoli.

In Case I. the largest of the nuclei did not exceed $\frac{1}{3500}$ of an inch, and the nucleoli were "point" or "dot-like." In Case II. the nuclei were much larger, $\frac{1}{3000}$ to $\frac{1}{1800}$ of an inch in diameter, the nucleoli small-sized, but many of them no longer dot-like; the size of the majority of these nuclei is stated at $\frac{1}{2500}$ of an inch. In Cases III. and IV. the average size is still greater, though a few of the largest in Case II. exceed the largest here, the measurements are $\frac{1}{2500}$ to $\frac{1}{1800}$. In Case V. a still larger size is attained, $\frac{1}{1430}$ of an inch for a maximum. The large size of the nucleoli in Cases III., IV., and V., has already been commented upon.

When it is remembered that, as has been seen, the largest of these nuclei presented all the characters which have been assigned as peculiar to cancer nuclei, and that the analogues even of the smaller may be found in many acknowledged cancers, it will, I think, be admitted as having been shown that every possible transition form between "fibro-plastic nuclei" and "cancer nuclei" may exist in different tumours, or in the same tumour, and that consequently the two may be regarded as the extremes of a series which are divided by no abrupt boundary line.

MORE, it may, I think, be legitimately affirmed, upon the basis of the data afforded by this paper, that *there is nothing in the morphological study of the nuclei of cancer, which will justify the doctrine of heterology, or would suggest it to an unprejudiced mind.* And should the homology of cancerous growths with any normal structure, say with connective tissue, be rendered probable by a profound study of the structure and anatomical relations of cancerous growths, there is nothing in the anatomy of the nuclei, even of the most characteristic cancers, to militate with the dogma.

Before leaving the subject of free nuclei, however, I desire to say a few words on the significance of the fact of the great abundance of these elements, in both cancerous and non-cancerous growths.

Nuclei, which are found free in studying a growth with the microscope, may be interpreted either as elements in an undeveloped state, which have not yet acquired a cell-covering, or as having been formerly cell-inclosed, and set free either by the breaking down of the cell wall by natural causes, such as fatty degeneration, or by violence in the operation of scraping or teasing the preparation for the microscope. It is probable that in various cases the freedom of nuclei may be referred to all of these three categories.

I quite agree, however, with those pathologists who interpret the free nuclei as undeveloped elements in the vast majority of cases. Thus, though in a degenerating and broken-down cancer, it might be supposed that the abundant free nuclei observed were derived, to a considerable extent, from degenerate and broken-down cells, such a supposition would not be justifiable in a juicy young growth of great developmental energy, in which everything indicates progress, and nothing decay, especially if in such a case nuclei should be at a maximum, and cells at a minimum, or even wholly wanting, as in the "fibro-nucleated" tumour of Bennett. While the idea that the nuclei had been set free by mechanical violence, is incompatible with the fact that free nuclei are as rare in some pathological growths, rich in cells, as they are abundant in others, although both may have been subjected to similar modes of examination. Without entering into an argument on this subject, which has been well investigated by others, I would call attention to the statement made in connection with Case V., that the cell-inclosed nuclei observed in that case were generally much smaller than the larger free nuclei; measuring from $\frac{1}{3300}$ to $\frac{1}{2600}$ of an inch in diameter, while some of the free nuclei even attained the prodigious size of $\frac{1}{1430}$ of an inch. If we accept these huge overgrown nuclei as presenting undeveloped elements, nuclei which had not yet acquired a cell wall, it would appear that in view of the fact that they are so much larger than the ordinary cell-inclosed nuclei of developing connective tissue, we must admit that they have continued to grow after they had attained the stage at which a cell-wall should have been acquired, and so that *growth has proceeded although development has been arrested.*

So much for the nuclei, and the probability of their specificity.

Next with regard to the cells.

Proposition 2 affirms the same relation, above indicated, between "cancer nuclei" and "fibro-plastic nuclei" to hold good between "cancer cells" and "fibro-plastic cells;" for this proposition I claim no originality, yet think proper to contribute my mite of testimony towards the establishment of a doctrine elsewhere announced, but far from having obtained a deserved reception. Indeed, J. Z. Laurence, in his little work on *The Diagnosis of Surgical Cancer*, has distinctly announced the proposition much as I would do in this place, and has brought forward evidence in such a manner as to preclude the necessity of a lengthy discussion here. He affirms, and my own observations fully accord with the statement, "that there do exist cell-forms, which it is difficult or impossible to refer either to the cancerous or fibro-plastic type exclusively; and, as a corollary, that the existence of such forms brings us to the conclusion that the two forms of cell cannot but be regarded as the extreme links of a chain of forms connected by intermediate stages."

As in the case of the free nuclei, not only may every possible transition form between these two extremes be observed in different tumours, but also occasionally in the same tumour, and that in new formations of connective tissue, whose history demonstrates them to be non-cancerous, as well as in cancers. A careful consideration of the description of the cell-forms in the above series of cases, well illustrates this assertion. In every case, but especially in the first four, cells closely approximating, if not isomorphous, with the typical cells of cancer were observed. These "cancer-cell" imitating elements fully equalled in bulk the supposed heterologous cells, which they resembled. Thus, while in Case I. "the largest of the rounded, oval, or angular forms did not exceed $\frac{1}{1500}$ of an inch in long diameter, in Case II. the largest of the similar elements attained the size of $\frac{1}{1000}$ of an inch; and in Cases III. and IV. from $\frac{1}{1000}$ to $\frac{1}{700}$ of an inch. In Case V. a still greater length was obtained by some irregularly triangular cells, but I shall not insist upon these cells, on account of their greater narrowness, and the smallness of their nuclei, as compared with the great length of the cell. It is true that none of the cells here described had more than one nucleus, but cells with plural nuclei are so far from being pathognomonic of cancer that they are often absent throughout acknowledged cancers of considerable bulk.

It is also true that in no part of the four tumours described were any cells observed containing any great number of those minute albumen-coated oil drops, which are the evidence in cancer of fatty degeneration. But this fact, whatever its value in a diagnostic point of view, can have no weight in the study of the question of homology, for fatty degeneration is a process which may occur in most normal and pathological tissues, and its presence, therefore, can never be available in attempting to establish the heterologous character of the elements in which it occurs.

Besides, in the best marked cancers, except in such parts of them as are beginning to soften, many individual cells occur in which no evidence of fatty metamorphosis can be found.

It appears, therefore, to me from these considerations that if, as is generally acknowledged, fibro-plastic nuclei and cells be homologous with the embryonic elements of connective tissue, be in fact pathological "young connective-tissue" elements, *there is every reason to regard the typical elements of ordinary cancer as deformed young connective-tissue elements;* and this relationship suggests a question of great practical importance, which may be thus expressed: May a growth, whose anatomy is that of symmetrically developing connective tissue, subsequently assume the cancerous character; or is the distortion and malformation characteristic of the elements of cancer impressed upon them from the earliest period of their existence? For myself, my own observations have hitherto quite agreed with those of Paget, who has found (p. 515 *loc. cit.*) the cancerous anatomy stamped upon the growth at the earliest period at which he has examined them. Yet, when I find, as has occasionally been recorded upon reliable authority, the extirpation of so-called fibro-plastic tumours, that is, of new formations of connective tissue, supposed to be symmetrical, followed by a return in the cicatrix, or elsewhere, of consecutive growths, having all the anatomy of cancer, I cannot overlook the possibility indicated by the question.

Another problem, which may appropriately be mentioned in this connection, is the possibility of a growth running the clinical history of cancer, although the anatomy, both of the primary and consecutive growths, may not be that of cancer, but of symmetrically developing connective tissue ("malignant fibro-plastic tumours"), of cartilage ("malignant enchondroma"), of bone ("malignant osteoid"), or of epithelial structures ("epithelial cancer").

The cases recorded by respectable observers, in which such a train of events has been alleged to occur, are comparatively rare, except for "epithelial cancer." Yet, in Paris, Velpeau has believed himself to have encountered a sufficient number of such cases to lead him to include epitheliomata, fibro-plastic growths, and enchondromata, under the common designation of cancer, and totally to reject the aid of minute anatomy in the diagnosis of tumours; while in Edinburgh, Bennet, in view of a similar class of cases, though he continues to adhere to minute anatomy, as a means of classifying new formations, asserts, that malignancy is an attribute of no particular class of tumours, but that growths of almost any anatomy may run the course hitherto predicated of cancer only, though those of a certain structure are *more* liable to do so than others, and conversely, that growths of any anatomy may prove ultimately benignant, though some are less liable to do so than others. I shall make no attempt in the present place to enter upon the discussion of this important problem,

upon which, however, I trust, at a future time, to be able to bestow some attention; but I cannot but observe that the malignancy of an enchondroma, or of any other growth, the homology of which is beyond dispute, would at once overturn the assumptions of those who suppose that heterology of structure is necessary to account for the malignancy of cancer.

ART. II.—*Account of an Epidemic Fever which Prevailed at Somers and Yorktown, Westchester County, N. Y., during the Months of February, March, April, May, and June*, 1859. By CHARLES A. LEE, M. D., of Peekskill, N. Y.

As the contagiousness of typhoid fever is not yet generally admitted, any facts bearing on this point possess a degree of interest sufficient to entitle them to be laid before the profession. It is very obvious that observations relating to the contagiousness of this disease can be most advantageously made amongst the scattered population and in the small villages of the country. It was under such circumstances that the following cases were observed. No one can doubt, on reading the history of these cases, that the disease was typhoid fever, in a majority of cases of a mild type, in others of a very malignant form. In all, some fifty cases have occurred during the last three months, scattered over a thinly peopled district of several miles in extent. Of this number, but two proved fatal. All the cases could be traced to one single source, a sporadic case, originating under circumstances likely to give rise to idio-miasmatic infection. The disease originated in Yorktown, but a majority of the cases occurred in the adjoining town of Somers, Westchester County, N. Y., all, however, traceable to the original case.

CASE I. The first case which occurred, and to which reference has been made, was under the medical charge of Dr. Curry, a highly respectable practitioner of Yorktown, to whom I am indebted for the following history of it, as well as several other cases which follow:—

"Fred. S., a stout, healthy young man, aged 24; habits good; intellectual capacity good; weight, 160 pounds; had received a violent shock from falling from a wagon two months before; was comatose for forty-eight hours from the concussion, the head receiving the whole force of the fall; recovered in a week entirely; went to work, and was much exposed through the whole month of December; suffered greatly with cold, having a job that required continual attention; ate cold dinners, otherwise lived well; drank a moderate quantity of spirits; immediately after the extreme cold weather, was attacked with diarrhœa, which prevented his working; remained at home, and sent to me for medicine; kept sending for three weeks, until I became wearied, and told his friends that I must see him; I did so; found him about the house and yard; his appearance was start-

ling; his face was pinched, pale, and cadaverous, his eyes sunken and sleepy; he was deaf; skin hot and burning; pulse 120; constant but moderate subsultus; perfect coherency; tongue red, dry, and nearly clean; much thirst; abdomen moderately tense, but extremely tender; bowels moving every hour; black, foul discharges, moderately copious, and tinged with blood; appetite much impaired, but not gone.

"I pronounced it a case of typhoid fever, urged the patient to bed, applied a blister to abdomen with great relief, gave calomel and opium in large doses, kept poultice to bowels for two weeks, gave Port wine, beef-tea, brandy, and quinine. At the end of forty days from the time of the attack, he began to convalesce, and at the end of sixty days was well."

"From this case," says Dr. C., "arising in the manner described, there have shot off, in perfectly straight lines, thirty others, bearing each idiosyncratic symptoms, but of the same general type. The residence of the young man, whose case I have referred to, stands upon the highest hill in Yorktown, two story, no basement, rooms small, no ventilation in the apartments occupied by him, except from the south, family large, two or three sleeping in a bed, no squalor, no fastidious neatness."

CASE II. "During the progress of the case," says Dr. C., "his brother, a very strong man, weighing 190 pounds, 25 years old, just recovered from a venereal disease, was attacked with rigors, headache, furred tongue; and, at the end of a week, in spite of cathartics, emetics, and sweatings, was a confirmed case of typhoid; bowels tympanitic, dejections frequent and offensive, slight sordes, delirium sometimes mild, at others furious, eyes red, countenance congested, as also slightly the lungs, pulse 90, and intermittent. It was a hard case; the treatment was severe, and he began to convalesce in twenty-one days; was well in thirty-five."

CASE III. "Simultaneously with this last, and in another room, his sister, aged 17, large and healthy, was attacked in the same manner; the same general symptoms were present, but much milder. Through the expectant mode of treatment, she recovered, without much suffering, after the third week."

CASES IV. and V. "These cases," continues Dr. C., "were in the lower story; but the contagion went up stairs, laying prostrate a married lady in the seventh month of pregnancy, and her daughter, aged 9. Both were severe cases, and recovered only after three or four weeks of strong treatment. At this period, however, the seeds of the disease were producing fruit among those neighbours who had been most attentive to this suffering household."

CASE VI. "About the 1st of February, I was called to see P. H., residing in Putnam County, about two miles from the family before spoken of. He was a strong man, 26 years of age, a journeyman carpenter, and fellow-workman with the first-described patient, and had nursed and watched over him for many days, until he became himself sick. When I first saw him, he was suffering under the usual premonitory symptoms, much headache, sickness at the stomach, loss of appetite, slightly furred tongue, and chilliness; pulse 75. I gave him quinine at once after opening the bowels; but I do not propose to give the details of the treatment. The case went

on for three weeks; the patient was delirious most of the time; he became blind and deaf; the bowels were slow, but all the time moderately tender and tense. At this time, sweating began, and with it hemorrhage from the bowels, not by quarts, but by gallons. He sank till every hope was gone. Brandy, opium, and tannin were used in immense doses with slight relief, when I began the use of sugar of lead in ten grain doses every time the bowels moved. The third exhibition of this medicine stopped the flow four days, when two teaspoonfuls of castor oil produced a moderate dejection from the bowels, the most healthy consistence of all. By continual bracing, the patient recovered at the end of about fifty days from the attack."

CASE VII. "While this patient was under treatment, another came under my charge, four miles to the westward, a very infirm lady, aged 66, but as decrepit as many at the age of 86. She was the mother of one of the former patients, had been much in the sick-room with her, and had washed the clothing from her person and bed. Headache and gastritis were the ruling symptoms. Her tongue was stiff for six weeks, so hard and cracked that she was entirely unable to protrude it; and a cloth wet with ice water was kept upon it by night and by day. She was for a long time nearly comatose, always thirsty, suffered much with singultus, would always take food, though always driven to it, became so emaciated and helpless that bed-sores were formed, had distinct petechiæ, seemed frequently dying from inanition, but finally rallied, and began to sit up at the end of eight weeks. The expectant mode of treatment alone saved her."

Thus far we are indebted to the notes of Dr. Curry for the history of this epidemic. Going back, however, to the month of February (the disease seems to have commenced in January, 1859), we have the history of the following case, from the pen of my friend, Dr. James Fountain, of Jefferson Valley, the attending physician. It should be stated, both in justice to Dr. Curry and Dr. Fountain, that their notes were not prepared with a view to publication.

CASE IX. "The fever, of which the following is a short narrative, seems to have been generated in my neighbourhood in a family, in a situation calculated to engender idio-miasmatic agents. It was an idio-miasmatic fever. On the 14th February, I visited a Mr. Tompkins, living within a short distance of the family referred to (Case 1), who had been sick of a typhoid fever. He had visited the family often, and had been for four or five days chilly and feverish, with flushed face and distress in his head, but no severe pain in it. He was moderately thirsty; had some appetite; pulse 100, soft and small; tongue had only a thin, white scurf, confined mostly to the back part of the two lateral halves, diminishing towards the centre and edges; sides and apex clean, and the whole moist. He had a strong predisposition by parentage to insanity, and, in fact, he was always in a peculiar state of mind, apart from a due balance, with an evident unsound look of countenance. His mother was of the same caste, and often quite insane, and his uncle and grandfather, by her side, were insane over forty years previous to their death. I prescribed a cathartic of calomel, followed by salts and senna. I left him a dose of calomel and Dover's powder, to be taken at bedtime, to be followed by castor oil next morning. I saw him the next day, about 3 o'clock P. M., and found him much worse,

evidently from the opium in the powder, for his face was suffused with blood, and his head pained him violently; pulse 115. I immediately commenced the free use of tartrate of antimony and potassa, with ice to the head. He was soon nauseated, and, in about two and one-half hours, he vomited. On the next morning all was quiet; pulse 100; tongue the same; headache gone and never returned, but he uniformly complained of a peculiar distress in his head, differing entirely, he said, from headache. I will here discontinue the details of the case as too tedious for the occasion, and only notice the peculiarities he had for nearly two months. His bowels became irritable from the use of calomel and tartrate of antimony, occasionally employed, and his mouth became very aphthous. Ipecac. and nit. argenti ultimately removed this condition. On the third day, the mind began to wander, and this aberration continued throughout, and, towards the close of his life, he was often raving, and would be up and dressed frequently. During his whole sickness he had very little thirst, and no pain, no foul tongue; it soon cleaned off, was red, smooth, dry, or shining; no sordes about the teeth; no offensive breath, nor offensive odor from his breath, or person, or bed. It was, throughout, a clean sickness. The fever was so confined to the brain and nervous system, that I viewed it more in the light of a cerebral perturbation than a general fever. Finally, after various appearances of convalescence, effusion took place in the brain, and he died comatose. Witnessing the bad effect of opium given in my Dover's powder on the start, and viewing it mostly as a brain affection, I prescribed no opiate until towards the close. I then had recourse to it only to calm his ravings, which it did, and rendered the closing scene quite comfortable."

CASES X., XI., XII., and XIII. "A few days after his decease, his two sons, aged 13 and 15, were attacked in the same gradual manner, but the brain in both was less affected. They remained sick two weeks, and then a younger son was attacked with chills, fever, and violent delirium. A full dose of tartrate of antimony and a calomel cathartic arrested this case at once, and cut it off in twenty-four hours. Soon after this, the daughter, aged 16, who had for three weeks shown symptoms of the disease, took her bed. She remained sick about ten days, and then convalesced. In all these children's cases the bowels were sluggish throughout, and remained so during convalescence. In all there were morning remissions and evening exacerbations. Distress, not pain in the head, a thin, white scurf on the tongue, moderate or no thirst, mental wanderings, no sordes around the teeth, no fetid breath, nor offensive odor from the body, no stupor. In fact, in these cases the fever seemed to spend its whole force on the brain and nervous system. Hence it may fairly be called a nervous fever. The most effectual remedial agent I used was a solution of tartrate of antimony, given during the exacerbations in fully nauseating doses. Its specific effect operated like a charm in removing the flush of the face, and in producing calm sleep. I found, on fair trial, that quinine, given during the remissions, aggravated the exacerbations, and did very great injury, although the remissions were accompanied with profuse perspiration. I found the disease of a mild type, and free from danger in well-balanced constitutions, but persistent in its career and true to itself."

These cases will serve to give a pretty accurate idea of the character of the disease.

The first case to which I was called (20th April), was that of W. S. Tompkins, a brother of Thomas T., whose case is above described by Dr. Fountain, aged 35, farmer, good constitution, and very temperate habits. He had been considerably exposed to the disease, having watched several nights with his brother, the latest about three weeks before he was taken down. Previous to this, however, he had been troubled with bilious derangement, a thickly furred tongue, headache, vitiated taste, loss of appetite, &c. He kept about, though feeling very unwell for two or three weeks previously, until about the 15th of April he took to his bed. He had been under the charge of Dr. Fountain from the time of his attack; who had administered several cathartics of calomel and salts, an emetic, and antimonial solution, besides applying one blister to the chest, and another over the back. I found him laboring under excessive nervous irritability; mind wandering; tongue moist, and but slightly coated with a white fur; skin warm, and bathed in a warm perspiration; great irritability of stomach; pulse 90, and soft; respirations 34; face flushed, with evident determination of blood to the head. He had constantly complained of great distress and pain in the back of the head. The discharges from the bowels were very copious, of a highly bilious character, and very offensive. The prostration was very great, syncope being induced by sitting up in bed. Wakefulness was a prominent symptom. The mind was incoherent for the most part, answering questions, however, intelligently; occasional tympanitis, pain, and gurgling in the bowels; the pulse ranged from 90 to 100 throughout the disease. The fever ran about twenty-one days, when convalescence began, and went on rapidly. The treatment was mildly expectant. Suitable nourishment, as beef and chicken-tea, barley and rice-water, arrowroot and corn-starch, were the chief remedies. The only medicines employed were acet. ammonia; spt. nit. ether; comp. tinct. opii; Dover's powder; ol. ricini; hydrarg. cum creta; and fluid ext. senna and rhei. Good wine and brandy were regularly but sparingly given; the other remedies from time to time, as circumstances required.

Up to the present time, June 16th, 1859, I have attended, since April 20th, ten cases of typhoid fever, varying in severity and duration from those in which the patient was scarcely obliged to take to the bed, to those attended with extreme prostration and malignancy. From these cases, though few in number, the following particulars may be gathered.

Symptoms of the Access.—These were either *cephalalgia*, or a peculiar sensation of distress in the head, not amounting to actual pain, more frequently in the posterior and basilar portions; a rumbling sensation, and ringing or buzzing in the ears; stiffness and pain in the neck and jaws; difficulty of swallowing; *anorexia, loss of appetite, and not unfrequently nausea* (in some cases the appetite continued quite good up to the day when the patient was obliged to take the bed); *chilly sensations*, or a distinct *chill*, varying in duration and severity in different cases; *pain in the limbs or loins; lassitude; bronchial irritation and cough*, with *soreness or pain in the chest; in one or two cases diarrhœa; in a few costiveness;* but in many the bowels were natural. The duration of the prodromic or forming stage varied greatly, from one day to four weeks, or even longer, if the patient could be believed. Usually, the stage of incuba-

tion, after exposure, lasted from one to two weeks. Several kept about for several days after the fever had fairly set in, but, in most cases, they took to the bed immediately. A few went through the disease without taking to the bed at all, except for an hour or two through the day, and then with their clothes on.

Causation.—With the exception of the first case, which, we have seen, originated from exposure to extreme cold, fatigue, and, perhaps, unsuitable food, all the others, it is believed, can be traced to contagion. In a few cases, the patients had been a good deal worn down by watching, fatigue, and anxiety, but others who watched but a single night were also attacked, and, in one case, soon after washing the clothes of a fever patient. The severity of the disease in every instance, when not aggravated by treatment, seemed to be in a good measure proportionate to the degree of exposure in the sick-room. Those but slightly exposed were but slightly affected, and *vice versa*. At first, it was not believed to be a contagious fever, and very few precautions, by way of ventilation, &c., were used to guard against it; as it progressed, however, so strongly marked did this feature become, that it was difficult to obtain watchers and nurses for the sick. Of the physicians who watched its progress, none doubted its contagiousness, after the first few cases. More males than females were attacked by it; but this may have been owing to the fact that the first person seized was a male, and had men watchers; they, on being attacked, had also watchers of the same sex, and so on. Five adult females, in families where the male head was attacked, became subjects of the disease, and some ten or twelve children of both sexes, under the same circumstances; most of these cases being comparatively mild.

All the cases which have occurred since the first case, fifty odd in number, may be distinctly traced to personal infection; and no sporadic case, since the first, has occurred, where the individual has not been thus exposed. Of 14 persons who watched with Wm. S. Tompkins, brother of the patient who first sickened, 7 took the disease. Where great attention was paid to changing frequently the bed and body linen, cleansing the patient's body and limbs daily, and free ventilation, no other member of the family, nor any who watched with the sick, were subsequently attacked;[1] but where these were neglected, nearly every inmate was seized, and about half who stayed for any length of time in the sick-room. The observed facts go to sustain the conclusions of M. Gendron, viz., that typhoid fever propagates itself very slowly by contagion; that the interval between the successive

[1] An exception to this has occurred since the above was written. A Mr. C. went safely through the disease—the fever running about twenty days—and though the greatest attention was paid to ventilation and cleanliness, the bed and body linen being changed daily, the wife and daughter, who had nursed the patient throughout, took the disease, from which they have not yet entirely recovered (August 1, 1859).

cases may vary from three weeks to a month, so that the fever may be several months spreading through a village or neighbourhood; that the period of incubation rarely exceeds eight or ten days, though it may extend to fifteen or more, and occasionally be as short as twenty-four hours. I have good reason, however, to doubt the correctness of his conclusion that the power of transmission, or communication, does not exist in the early period of the disease, and is rarely active before the sixteenth day.

Symptoms referable to the General Aspect; Expression of Countenance, &c.—As a general rule, there was more or less dulness or listlessness of expression, with a peculiar lack-lustre of the eye. The complexion, in cases of much severity, was considerably altered, sometimes of a dusky hue, at others, reddened, or slightly livid. The capillary vessels of the cheeks, especially, were much congested; occasionally the congestion extended to the chest and other parts of the body. The redness disappeared on pressure with the finger, returning with greater celerity in proportion to the brightness of the colour, and less quickly in proportion to its duskiness or lividity, a fact, first particularly noticed in this disease by Dr. Flint, showing, as he inferred, that the colour is an indication of the degree in which the forces of the circulation residing in the capillary system are depressed. It has been suggested that this capillary congestion of the face and surface generally is dependent on the complication of pulmonary disease, but no such connection was observed in the cases which came under my observation. Indeed, the deepest suffusion was observed in some instances where there was no pulmonary complication at all, and, on the other hand, in some cases where there was considerable pulmonary congestion, there was no change in the colour of the countenance observed, nor was there any special connection noticed between the degree of capillary congestion and the state of the pulse, as to force and frequency. Whether such appearances of the surfaces, like petechiæ, may not rather be dependent on the state of the blood than the forces of the general circulation, remains to be determined by future observations. In one severe case, *great tremulousness of the muscles of the face* was strongly marked; some lost their natural expression of features; in a majority, especially of the severer cases, the *expression was heavy, dull, stupid, or vacant*, while in some, it was nearly natural throughout. Most of the patients lay on the back, and, in the worst cases, the tendency to slide downward in bed was noticed. Other positions were assumed where the disease was mild, or its severity abated.

Symptoms referable to the Nervous System.—These were generally strongly marked, and, in severe cases, always present, varying, however, in kind, as well as degree. In three or four cases, delirium may be said to have been *active;* in some, *passive.* In mild cases, it was wholly absent. In one case, the patient attempted to stab himself with a penknife, and required close watching. In general, it manifested itself by incoherent speech, loss of memory, partial abolition of hearing, and in one of sight. Some com-

plained of a peculiar and indescribable feeling in the head, rumbling or ringing in the ears, and perversion or loss of the natural taste. The latter was observed in every case, except the very mildest. The patient would often insist on getting out of bed, and dressing himself, even when unable to stand, often asking irrelevant questions, and showing total unconsciousness as to his real condition. In several instances, the patient could not be induced to take the bed until the physical strength was so far exhausted that he was no longer able to sit up. There was no persistent delusion in any case, but a constant succession of vagaries and whimsical notions. No fear of death was manifested in a single instance. In every case, the patient gave replies to questions, but would immediately relapse into a dreamy or half-conscious state. The feebleness of the intellectual operations seemed to bear a direct proportion to that of the physical powers. The memory was particularly deficient; and, on recovery, they could very imperfectly recall any of the circumstances that had transpired. *Opiates* did not seem in my own practice, to increase the cerebral disturbance. For the most part, they had a contrary effect. In the only fatal case I attended, a man above 60, who died from peritonitis from perforation of the intestines, there was no delirium nor mental aberration whatever. His intellect remained clear up to the very moment of death. The case, however, was regarded as a mild one up to the time when perforation suddenly took place. In addition to the sluggishness of the mental powers, and absence of anxiety as to the result, no emotional sensibility was manifested, either pleasurable or otherwise. *Somnolency* was present in most of the cases, *vigilance* in several; while *coma* was present in only a single instance of the cases under my charge.

Senses and Sensibility.—In most of the cases, there was a peculiar feeling of distress or actual *pain in the head;* in two, cephalalgia was very severe. In a majority of cases, it was moderate; but, in general, it was more commonly observed during the *access* than after the disease was fully formed. *Pain in the limbs* was of frequent occurrence, seemingly of a rheumatic or neuralgic character. Sometimes it was seated in the loins, chest, or back, especially the back of the neck; but in no case was it of long continuance. In most cases, there was *diminished general sensibility.* No particular morbid changes were observed in the *eye,* except the dulness already noticed. *Deafness,* or at least *dulness of hearing,* was frequently present. In a few cases, there was increased susceptibility to sound. No perversion of the sense of *smell* was observed; though that of *taste* was almost uniformly affected. *Involuntary muscular contractions* were only observed in two instances, both of which recovered. *Picking the bedclothes* was noted in one case.

Prostration.—This was not extreme in any case. The patients could generally raise themselves in bed, or be assisted to a chair, and remain seated or semi-recumbent while the bed was being made. They usually

were assisted out of bed to pass their evacuations; though in four cases a bed-pan had to be used, syncope being induced by the erect posture. In a few cases, patients, as already noticed, passed through the disease without taking to the bed, except reclining occasionally.

Symptoms referable to the Digestive System.—The *appetite* was usually wanting during the accessory period, but not invariably. There was a general loathing or dislike of animal food and broths, as beef-tea, chicken-tea, &c.; and considerable urging was necessary to induce the patients to swallow them. *Thirst* was not strongly marked, except in two or three cases; in a majority, the patients seldom asked for drink, but took it freely when offered. It may be that the frequent absence of this sensation is owing, as Dr. Flint has suggested, to bluntness of perception, or mental apathy, as the morbid conditions which occasion thirst are present. The *tongue* was generally moist, and covered with a thin white coat; in many, it presented nearly a healthy appearance; in one, the teeth, lips, &c. were covered with black sordes. A dry state of the tongue, which I have usually met with in a majority of cases of typhoid fever, was rarely observed in this epidemic. Dr. Flint noticed dryness of the tongue in thirty-six out of fifty cases, and attributes it not merely to a diminution of the secretions from the salivary glands and mucous follicles, but also to the apathy of the patient as respects painful sensations. The patient, experiencing little or no discomfort from the dryness and hardness of the tongue, does not move the organ sufficiently to diffuse the scanty salivary secretion over its surface, the tongue, moreover, remaining motionless from participating in the inertia of the muscular system, aided also by the somnolency which is present,[1] in consequence of which he respires chiefly through the mouth. If this explanation be correct, and it seems highly plausible, then we may infer that there was less mental apathy and somnolence in this epidemic than in the hospital cases recorded by this author. In one case only was the tongue *reddened, glazed,* and *fissured.* In this case, it was so stiff that the patient could not thrust it from the mouth. The patient died from peritonitis, consequent on perforation. This state of the tongue had existed about one week previous to his death. *Tremulousness of the tongue* was observed in a few instances; but this, as well as the appearances of the tongue, were of no great use in forming a prognosis. The same remark will apply to the *difficulty of protruding the tongue,* which would seem to be rather connected with the state of the mind, or voluntary power, than to diminished muscular force. *Nausea and vomiting* rarely occurred, unless caused by medicine. The *alvine discharges* were usually of a healthy character, if the bowels were not disturbed by medicine. In several cases, however, they were of a highly bilious character; in a few, *mucus* abounded in the evacuations. Diarrhœa was not unfrequent when

[1] Clinical Reports on Continued Fever, &c., p. 64.

indigestible food or improper drinks were taken. In one case, severe diarrhœa was brought on by drinking cider and buttermilk. The bowels were in many cases easily disturbed. There was an irritable condition of the gastro-intestinal mucous membrane, which rendered the use of antimony and other irritant medications very hazardous. When spontaneous diarrhœa occurred, however, it was generally easily controlled. *Costiveness* was present in three cases. *Hemorrhage* from the bowels occurred in two cases; and in both it was profuse. *Tympanitis* was present in three cases; *abdominal tenderness* was extreme in the fatal case; in six others, it was present, but moderate in degree. It was mostly confined to the right iliac region. *Gurgling* was present in four cases, and was usually associated with tenderness on pressure, and tympanitis.

Cutaneous Eruptions.—These were present in a majority of cases, of a rose red colour, and oval in shape, and confined, so far as observed, to the chest and abdomen. *Petechial eruption* was noticed in two cases, scattered over the whole body. *Sudamina* were not noticed in any case.

Symptoms referable to the Respiratory Apparatus.—Bronchial irritation and pulmonary congestion were marked symptoms in a majority of the cases of this epidemic. In some slight, in others so severe as to complicate the case very seriously. In one case it occurred in connection with pneumonitis. In three cases cough was one of the earliest symptoms. In one case the congestion was so great and the cough so urgent, as apparently to threaten suffocation. In a few there was no cough and no pulmonary symptoms. Expectoration was generally difficult, owing to the thickness and adhesiveness of the sputa. In two cases there was congestion of the mucous membrane of the mouth and fauces, as well as the bronchi.

There was *pain in the chest* in two or three cases, and it was always associated with cough. *Aberrations of respiration* were not unfrequent, varying in number from eight to forty per minute. In one case there was *stertor;* in three *sighing respiration;* in two *fainting* on slight exertion or mental excitement. In a majority of cases the breathing was either moderately quickened, or nearly natural. In the case where the respirations were most frequent, the patient was a very nervous, irritable subject, and labored under considerable pulmonary congestion. This patient recovered slowly. Most of anomalies connected with the function of respiration seemed dependent on a disordered or morbid state of the nervous centres, and were more strongly marked in proportion as the latter was manifested. *Epistaxis* was present in only one instance, and in this the sputa were tinged with blood. As there was considerable fulness of the cerebral vessels, headache, cough, &c., it was attended with great relief to all the symptoms, and the bleeding was accordingly promoted by applying leeches to the internal surface of the nostrils. *Singultus* was observed in only one case, and that terminated fatally. It was a frequent symptom from almost the very commencement of the case. It was the case in which the tongue

was stiff, glazed, red, dry, and fissured, and which terminated in peritonitis, from perforation of the intestine. It was not associated with involuntary contractions of any of the voluntary muscles.

Symptoms referable to the Circulation.—With regard to the pulse, it may be said to have ranged from natural up to 130 in a minute. In no instance was it observed to be less frequent than in health. In one case, an adult, it ranged from 80 to 90 throughout the disease. In the fatal case it was usually about 100 up to the time when perforation of the intestine was supposed to have taken place, when it immediately rose to 120, and continued very frequent till death took place. On the second day after, as in a majority of cases, there was an evident exacerbation towards evening: the pulse increased in frequency accordingly. The frequency of the pulse, however, was not observed to bear any direct relation to the severity of the disease. In one of the severest cases it was tolerably full, soft, and but 90 in the minute. In one instance it was 120 for two or three days before the patient took to her bed. In children the frequency was relatively much greater than in adults. Generally, the pulse was small and feeble. Hardness of pulse was strongly marked during convalescence, and increased hardness indicated not only a favorable termination, but speedy convalescence. *Capillary congestion*, especially of the face, was generally present in the earlier stages of the disease. It bore no particular relation to the state of the general circulation, and was wholly independent of the state of the pulse. In some few cases it did not exist in any marked degree. Where it existed in any considerable degree, there was a corresponding amount of pulmonary congestion. May we not safely conclude that it is a phenomenon, solely dependent on the state of innervation?

Symptoms referable to Skin.—We refer here to its condition as to heat, dryness, moisture, &c., independent of the characteristic eruptions to which reference has already been made. In about one-half of the cases the skin remained moist throughout the whole course of the disease. In two cases sweating was profuse, and attended with a strong characteristic odor. In three cases the skin continued for the most part dry, although warm and mildly stimulating herb-teas would induce perspiration. In two or three cases the sweat was partial. In no instance was perspiration observed to exert any favorable effect on the progress of the disease, nor was it observed to prove critical in a single instance. Diaphoretics, also, had no particular influence in moderating or controlling its career. Though but little is known as to the antecedent conditions or causes on which sweating in fever depends, it seems very probable that, like capillary congestion, it is intimately connected with the state of the innervation, or condition of the nervous centres. In the fatal case already noticed, the skin remained uniformly harsh and dry, until symptoms of perforation took place, when the patient became suddenly bathed in a cold perspiration, which continued till death. On the whole, however, the state of the skin seems to have but slight patho-

logical significance in this disease. The *heat* of the skin was pretty uniformly above the natural standard, whether dry or moist. In no instance was it observed below the natural temperature, unless of the extremities. *Pungent heat* (calor mordicans) was not noticed in any case.

The *symptoms referable to the genito-urinary system* were not very characteristic or important. The urine may be said to have been uniformly scanty, generally high-coloured, and, near the crisis, loaded with lithates. In the fatal case there was, towards the close of the disease, a frequent desire to void urine without the ability. In one or two cases of adults, the urine was passed involuntarily. In children this frequently occurred.

As to the duration of the disease, the average was about fourteen days, varying from six to twenty-two. Several went through a light attack of the disease, without taking to the bed, complaining of pains in the head, back, and limbs; loss of appetite and loathing of food; languor and debility, which lasted from two to four or five weeks. Some, who had been exposed to the disease, had copious and very offensive sweats and urine, without the other above-mentioned symptoms. No facts were observed that had any special bearing on the question of critical days. The difficulty of designating the day on which the fever may be said to have commenced, precluded the possibility of arriving at any certain conclusion on this point. If we date from the day when the patient takes to his bed, we shall greatly err, inasmuch as there is good reason to believe that the access, or forming stage, often ends some days before this event. Nor can we be more precise in regard to the date of convalescence. We can often determine, it is true, when the febrile symptoms abate, but it is often very difficult, owing to the gradual manner in which it takes place, and it is rendered still more difficult in cases where complications exist. It appears, from consulting Dr. Flint's *Report on Continued Fever*, that the average duration of his cases of typhoid fever, in private practice, was fourteen days, and of hospital cases, twenty days. My fatal case terminated on or about the fourteenth day.

The *circumstances attending convalescence* were not especially remarkable. In general, it was slow but steady. The strength was a long time in returning. The patients complained of their knees remaining particularly weak, so that they walked unsteadily, and were often in danger of suddenly falling. The bowels were generally inclined to costiveness, rendering it necessary to take laxatives, enemata, and food of a relaxing tendency. The appetite was, for the most part, craving. In one case a relapse occurred from eating too heartily of improper food in the early stage of convalescence. In a few cases convalescence was attended with copious perspiration at night. In general, there was a gradual decline of the febrile symptoms, and not a sudden abatement.

No *sequelæ* of the disease were observed worth particular notice. In one, *deafness*, which had been a prominent symptom throughout the disease,

was very slowly recovered from. In no instance were glandular swellings or boils observed to follow the disease.

As but two fatal cases occurred in over fifty, and of these no opportunity for post-mortem examination occurred, we can, therefore, say nothing of the pathological appearances.

Treatment.—A few brief remarks on treatment must suffice. The following remarks embrace the results of my observation and experience as regards the management of typhoid fever, derived not only from the present epidemic, but from all I have seen and known of the disease, at home and abroad, for the last thirty years:—

I. Typhoid fever runs a definite course, is a self-limited disease, and tends spontaneously to a favourable termination. When uncomplicated, the whole management may be summed up *in good nursing, great attention to cleanliness, free ventilation*, and SUITABLE AND SUFFICIENT NOURISHMENT. Generally, no medicine whatever need be given. The bowels may be kept open by simple enemata of tepid water; the temperature of the surface regulated by frequent sponging with spirit and water; and, if there is excessive or preternatural heat of the head, cloths wet with ice water should be frequently applied. Active medication by cathartics, emetics, bloodletting, and blisters, only tends to thwart the natural tendency to recovery, to disturb the recuperative efforts, and to protract the case, besides adding greatly to the sufferings and discomfort of the patient. I have never seen or known a case of typhoid fever cut short or materially abridged by treatment; but I have known many protracted and rendered incurable by unnecessary activity.

II. The disease exhibits striking diversities, at different times and places, as regards severity, duration, and mortality, irrespective of measures of treatment;[1] but these diversities may modify the management, *so far as the kind and quantity of the nourishment are concerned*, it being assumed that in all cases the utmost attention is paid to cleanliness and ventilation.

III. The above conclusions apply to uncomplicated cases, where no local complications exist; and these are the most frequent sources of danger. *Cerebral complications* are to be combated by the appropriate remedies, such as leeches to the inner nostrils, the temples, and behind the ears, or cups to the back of the neck, if there is evidence of fulness of the cerebral vessels, removal of the hair, cold evaporating lotions, and stimulating pediluvia. It is to be noted, however, that cephalalgia, somnolency, insomnia, and delirium are, to a considerable extent, natural elements of the disease, and do not, as a general rule, indicate too great fulness of the vessels of the brain. They, for the most part, at a certain stage of the disease, subside spontaneously under the rational expectant treatment. *Somnolency* is usually benefited by opiates, understanding by it that condition of semi-

[1] See Flint's Report on Continued Fever, p. 262.

consciousness from which the patient is readily but momentarily roused. *Insomnia*, or *vigilance*, demands also the use of opiates, as Dover's powder or morphia. *Delirium*, unless very active, demands no special treatment, appropriate general means being all that is usually required. Its presence does not contra-indicate the use of opiates. It may be abated by the use of *antimony* in small doses, in connection with anodynes; but its liability to disturb the stomach, and irritate the gastro-intestinal mucous membrane, renders its use objectionable. If used at all, it must be in very minute doses, and those only temporarily, and combined with demulcents and opiates. *Nausea and vomiting* will usually be promptly relieved by a sinapism to the epigastrium, or small effervescing doses of citrate of potash, aided by small doses of morphia. *Diarrhœa* yields to sinapisms and turpentine to the abdomen, anodyne and astringent enemata, and the internal use of opiates. Unless the discharges, however, are so frequent as to debilitate the patient, they should not be interfered with, especially if of a bilious character. *Hemorrhage* from the bowels is readily controlled by *opium*, *acetate of lead*, and *tannin*, administered by the mouth and by enema. *Constipation* may be obviated, generally, by simple laxative enemata. No active cathartics should be administered, as they are apt to bring on diarrhœa. If the discharges are colourless, a few grains of *blue mass*, or *hyd. cum creta*, followed by a teaspoonful of *ol. ricini*, will be proper. Generally, however, we aim to dispense with cathartics as far as possible in the management, believing that their use is hazardous, and tends to complicate the case. If used, the mildest are to be selected, as oil, magnesia, &c. If cathartics are not employed, the discharges will usually present a natural and healthy appearance throughout the whole course of the disease. *Meteorism*, or *tympanitis*, should be met by warm spirituous fomentations, or warm turpentine to the abdomen, enemata, and, if costiveness be present, a moderate dose of oil. *Abdominal tenderness* may require the same external means. *Pulmonary complications* will also require some modification of the treatment. If *pneumonitis* be present, cups or leeches over the part affected, followed by warm cataplasms, fomentations, or sinapisms, will generally be proper. General bleeding is rarely if ever admissible; and, in taking blood locally, we must carefully regulate the quantity by due regard to the constitution and strength of the patient, stage of the disease, and the extent of the local complication. The inflammation is rarely, if ever, of an active kind, and, as a general rule, rarely demands active measures. We have long since discarded antimonials and blisters in this complication, the former as too debilitating and locally irritant, the latter adding greatly to the irritability of the patient, and not attended with a corresponding degree of benefit. Sinapisms answer a far better purpose. *Mercurials* are for the most part uncalled for, unless occasionally, as when, already stated, a cholagogue effect be desired. Pulmonary or bronchial congestion, or inflammation, in typhoid fever, does not

contra-indicate the employment of supporting measures. *Cough* may be allayed by opiates and demulcents, and expectoration promoted by small doses of the infusion or syrup of senega and liquorice. *Peritonitis*, if attended with perforation, will generally prove fatal under any treatment. Opiates in large doses promise the most success, aided by external fomentations, and sinapisms, &c. If unattended with perforation, the same measures will also be proper. *Apoplectic coma*, if the result of effusion, will terminate in death; if owing to exhaustion of the nervous energies, wine, brandy, and animal broths will be the appropriate remedies. Pharmaceutical *tonics*, such as quinine, &c., I have never found of much benefit in this disease. *Cinchona*, in any of its preparations, has no special curative power in this form of fever, though so admirable in intermittents and remittents. It is very apt to offend the stomach, and lessen the desire for food. *Suitable nutriment*, however, is of the first importance. Facts abundantly sustain the conclusion that the digestion and appropriation of food are not suspended, but go on in this disease. Nothing is more common than to find the evacuations remain nearly if not quite natural throughout its whole course. The stomach is not disturbed by proper food in proper form, and in proper quantity. An error in either of these respects is easily committed, and will result in injury to the patient. The grand indication, indeed, is to sustain the patient, while the disease runs its natural career. The *patient* is rather to be treated than his *disease*. Nutritious aliment, such as beef-tea, essence of beef, milk porridge, &c., may be commenced early in the disease, Dr. Flint thinks at the end of the first week. We should say on the first day, and continued through its whole course. Strong *chicken soup*, with barley or rice, will do well for a change; though the essence of beef is indispensable where there is much prostration. These articles are to be given at short and regular intervals, without any particular regard to the patient's tastes or wishes, in small or larger quantity, according to the condition of the patient, and often in connection with appropriate stimulants, as wine or brandy. The following remarks of Dr. Flint on this subject are so true and appropriate that I cannot forbear quoting them: "Nutriment must be administered not only irrespective of any expressions of desire by the patient, but without reference to his appetite, and even when taken with disgust. If the sense of hunger, the appetite and the taste are competent to govern the ingestion of food in a state of health, this is not true of continued fever. The proper exercise of these functions involves normal mental perceptions. In health, the mind feels certain impressions derived from within the organism, by which the desire for food, or hunger, expresses the demand of the system for fresh supplies. The mind, in health, experiences pleasure from the ingestion of aliment, in other words from the indulgence of appetite, and is capable of discriminating appropriate kinds of food by the sense of taste. All this is changed in fever. The mental perceptions thus fail to respond to the

wants of the system; the mind lacks sufficient healthful activity for appetite or taste. The system, nevertheless, needs the addition of new materials for calorification and nutrition; and the power of assimilation, although impaired, is not wholly lost. The indication for nutriment, in short, exists; but the criteria pertaining to the consciousness of the patient, by which the indication may be measured in health, are perverted or suspended by the disease, so that it becomes necessary to fulfil the indication without consulting the mental functions, viz., hunger, appetite, or taste, which were doubtless designed to secure an adequate supply of proper aliment in health."

The tendency to death, it may be added, in fever, is from asthenia. We guard against this danger in the most effectual manner by giving proper nutriment. Innutrition, coöperating with the essential morbid condition in fever, will give rise to delirium, prostration, and all those alarming symptoms which are generally supposed to spring from the disease itself.

P. S. Aug. 2, 1859.—Two new cases of typhoid fever only have occurred since the above paper was written, viz., the wife and daughter of a man who went through a very severe attack of the fever, and who was believed to have taken it from watching several nights with one of the sick. The fifty or more cases which have occurred, have been scattered over a district six or eight miles square, and all can be traced to exposure to the disease, except the first case, which was sporadic. No person else has been attacked, unless personally exposed. It is needless to add that this would not have happened, had the cause been atmospheric, or general, nor would it have been spread over so large a space, had it depended on local vegetable or animal decomposition. Moreover, it commenced in the coldest weather in January, and on the highest hill in this region of country, where, even in summer, no local cause of fevers exists, the locality, being, in all respects, most healthy. I submit, then, that the history of this epidemic goes to sustain the conclusion—now very generally adopted—that typhoid fever, though it may originate sporadically, from ordinary causes, yet may be propagated by idio-miasmatic effluvia, or personal infection.

ART. III.—*Amputation at the Shoulder-Joint.* By B. J. D. IRWIN, M. D., Assistant Surgeon, U. S. Army.

ON the 16th of September, 1858, I was requested to visit one of the stations of the Southern Overland Mail Company, where a number of men were reported to have been dangerously wounded. I set out at once, and arrived

at the place early the next morning, after a smart ride of one hundred and fifteen miles, but found that three of the four wounded men had already died. The history of the survivor, Silas St. John, a strong, robust, healthy young man, æt. 24, a native of New York City, was as follows: He, with three Americans and three Mexican *boys*, was engaged in keeping the mail station. On the evening of the 8th, one of the latter was placed on guard, and the remainder of the party retired to rest for the night; about midnight the Mexicans arose, and with axes and a large hammer attempted to murder their sleeping companions. St. John awoke, and hearing blows given, was in the act of springing from his bed when he received a terrible blow from an axe, which almost severed his left arm from his body, followed quickly by another that cut the fleshy part of the same arm in a shocking manner; this was succeeded by another stroke that cut through the anterior external portion of the right thigh, a short distance below the joint. By this time he succeeded in grasping his pistol, and having fired at the desperate assassins, they fled and were seen no more. One of the unfortunate victims who slept outside of the door of the rude shed never awoke; another, with his face and head frightfully chopped and mangled, lived in great agony until the evening of the next day; while a third, whose head was almost cloven in two, the brain continually oozing from the shattered skull, lingered until the *sixth* day, during which time his frenzied craving for water to quench his burning thirst was of the most heart-rending character. On the evening of the next day the mail stage came by and found St. John, the only survivor of his party, alone in a rude hovel in the wilderness, without food or water, unable to move; his wounds undressed, stiffened, and full of loathsome maggots; his companions had died one by one a horrible death, and lastly, to add to the horrors of his suffering, the hungry wolves and ravens came and banquetted upon the putrefying corpse of one of his dead companions which lay but a few feet from his desolate bed. The mental and physical sufferings which he endured are marvellous to think of. Yet he never complained nor flinched for a moment. Calm and resigned, he bore his torments with the fortitude of a martyr.

After administering to his immediate wants, one of the mail party was left with him, and remained until my arrival on the 17th, at which time his condition was as follows: he was weak and pallid from loss of blood, sleep, and constant mental and physical suffering; his disposition was cheerful, and he evinced much pleasure at the prospect of having his wounds attended to. A deep, incised wound, about eight inches in length, extending from the point of the acromion process, passing inwards, downwards, and backwards, laid open the shoulder-joint, passed through the external portion of the head of the humerus, and thence downward, splintering the bone through about four inches of its course. The wound in the thigh proved to be only a severe lesion of the soft parts, about eight inches long and three deep.

After a careful examination, I saw it would be impossible to make any effort to save the arm; I therefore determined to remove it at once. The patient was informed of the necessity for the operation, and his permission was accorded almost cheerfully. The only assistance that I could command was from three of the men forming my escort. Having made a kind of bed of some bags of corn, the patient was placed on it. One of the men having been instructed how to compress the axillary artery, and the other assistants properly disposed of, I removed the limb as follows: the patient lying on his back, with the shoulder elevated, I placed myself on the outside, and grasping the arm, I passed the catling through the original wound, thence inwards behind the fractured point of the humerus, and downwards, forming a large flap from the anterior and inner aspect of the arm, which made up for the deficiency caused by the character of the wound, which left the superior-posterior aspect of the joint entirely devoid of muscular tissue. With the aid of a scalpel, the remaining portion of the head and neck of the humerus was removed from the glenoid cavity, the granulated surface of the old wound revivified, and the arteries tied as quickly as possible, after which the edges of the wound were brought together and retained by interrupted sutures and some bands of adhesive plaster. Cold-water dressing was applied, with a light bandage suitable to the part. The wound in the lower limb was dressed by inverting the large fleshy flap, and retaining it in its normal position by several interrupted sutures. Cold-water dressing and the maintenance of the thigh in a semi-flexed position were the only requisites here. Forty drops of tincture of opium were administered, and the patient placed in as comfortable a bed as the meagre circumstances of the place would permit. Chloroform was not at hand to be given, and the only stimulus obtainable was a few drachms of essence of ginger. The celerity with which the operation was performed, and the fortitude and excellent disposition of the patient, saved him from everything like protracted suffering. In the evening, the *tinct. opii* was repeated, and proper directions having been given for the dressing of his wounds, I left him, having previously sent for some wine, brandy, and other nourishment. Of the former, f℥viij, and the latter, f℥iv, were allowed him daily.

During the night of the 23d he arrived at the fort, having travelled in a common wagon sixty miles over a rough road during the two preceding days; and, as he was weak and fatigued, half a grain of sulphate of morphia was given him, and he was placed in a comfortable bed. Next morning I examined his wounds, and found the lesion at the shoulder had united by first intention, save at a point where the ligatures protruded. The wound in the thigh had partly opened. Proper dressings were applied, generous diet given, and the patient continued to convalesce without an untoward symptom. Most of the ligatures came away between the ninth and twelfth days, and on the 15th the last, that from the axillary

artery. Occasionally he suffered from frightful dreams, and imaginary pain in the lost arm. Whilst recovering, he had two attacks of quotidian intermittent fever, which readily yielded to quinine. On the 24th day after the operation he was walking about, and in less than six weeks he started for the Eastern States, restored to perfect health.

FORT BUCHANAN, ARIZONA, April 10th, 1859.

ART. IV.—*Vesico-Vaginal Fistula.* By C. S. FENNER, M. D., of Memphis, Tenn.

THE operation for the cure of vesico-vaginal fistula has now become fully established. For this grand surgical triumph we are indebted to the skill and persevering energy of Dr. J. M. Sims. It was accomplished only after years of intense application, much reflection, and many ineffectual attempts, each of which stimulated him to renewed exertions, and suggested to his mind changes and improvements, until success crowned his efforts, and placed him before the world as one of the benefactors of the nineteenth century.

Since the publication of Dr. Sims's first successful cases, the only material changes or improvements in the operation have been in the manner of fastening the sutures. Dr. S. has abandoned his "clamp suture," and adopted simply the "twisted interrupted suture." Dr. Bozeman uses a plate of lead perforated with holes, through which he draws the ends of the wire and fastens them; denominating it the "button suture." I have, on two occasions, used what may be called the single shot suture, passing both ends of the wire through a perforation in a No. 6 shot, and forcing it down on the wire until the denuded parts were brought in contact; then fastening it, cutting off the wire, and turning the ends down in opposite directions over the shot. This method of holding the suture in place is similar to that used by Dr. Bozeman in fastening the wire after it is passed through the perforation in his button.

Within the last few months, I have operated on four cases of vesico-vaginal fistula, a report of which I give below:—

CASE I.—Maria, a servant girl, aged 18 years, came under my charge, Oct. 3d, 1858, with vesico-vaginal fistula of ten months' standing; was delivered of her first child after a difficult labour requiring the aid of forceps; child stillborn.

Examination.—Found an oval fistula, of sufficient size to admit the end of the little finger, situated in the left side of the vesical trigone.

Operation.—Assisted by my friend, Dr. W. B. Wright, I freshened the edges, introduced five silver sutures, and brought the parts together by simply twisting the ends of the wire, as recommended by Dr. Sims. The

day after the operation, her menstrual discharge came on, and lasted five days. At the end of eight days, I removed the sutures, and found union perfect. She wore the catheter a few days, and then returned to her labour in the field, and remained entirely well for five months; when a slight dribbling of urine came on, and she was sent to me again. On examination, I discovered a minute opening in the cicatrix which would admit the end of a small probe. I closed this by another operation, but, in this instance, union did not take place. In a few days I repeated the operation, in presence of Drs. Borland and Willet, introducing three stitches, and on removing them on the sixth day found union perfect.

CASE II.—Mrs. T., from Mississippi, aged 20 years, was sent me, Oct. 20th, 1858, by Dr. J. S. Davis. Had her first child eight months before, after a difficult labour requiring the use of forceps. The child was born alive, and of large size. After delivery she had no control over the contents of the bladder.

Examination.—Found an opening half an inch in its longest diameter, in the vesical trigone, on the left side; pelvis unusually small; labia much excoriated from constant contact with urine.

Operation.—Assisted by Drs. Tucker and Woodward, the edges were pared, four sutures introduced, and the wires simply twisted. On the eighth day, removed the stitches, and found union entire, except at a point not larger than the head of a pin, which I hoped would close by the application of the nitrate of silver. She preferred to return home and wait awhile before submitting to another operation. Dr. Davis applied the caustic, but without benefit. He wrote me, under date of Nov. 11th, as follows: "I saw Mrs. T. this evening, at her house, and found her more cheerful than usual. She says, by lying on her right side, she passes the whole night without the escape of a drop of urine, and in the morning discharges it pleno rivo; but after being up for a few hours, it begins to run away by the fistulous opening." She came to me for another operation, June 8th, 1859. I found, on close examination, a minute opening just below the line of the cicatrix, not larger than a bristle. After paring the parts, I introduced three twisted interrupted sutures, and on removing them on the seventh day, found union perfect.

CASE III.—Hannah, a stout, healthy negro woman, came under my care, April 7th, 1859. She was about twenty years of age; was delivered of her first child two years ago, after a difficult labour. The child was stillborn. The urine has not been retained since.

Examination.—Found a large circular opening in the bas-fond of the bladder. A considerable portion of the anterior lip of the cervix uteri had sloughed away, leaving a thin sharp edge just at the os. The vaginal canal was shortened nearly one-half. From the root of the urethra to the anterior edge of the fistula, it was one inch; the anterior edge entirely unyielding, and the sides could not be brought together laterally.

Operation.—I pared the edges, including the surface left at the os uteri, introduced five sutures, and, on twisting them, found the parts both on the right and left side came together; but the stitches passing through the uterus failed to approximate the parts, and finally tore out. On the eighth day, I removed the remaining stitches, and found union had taken place on each side of the os uteri. A few days afterwards, I freshened the edges again. The uterine surface that could be pared was not more than two lines in breadth, extending half an inch transversely. I introduced four sutures,

drew down the womb; to do which the speculum had to be withdrawn, leaving the point just beneath the sphincter-ani muscle. The sutures were twisted and left ten days; and, on removing them, I found some union had taken place at the sides, leaving a triangular opening, the base being formed by the uterine edge of the fistula. The rigidity of the parts preventing the sides of the fistula from approximating, and the uterine portion acting as a wedge to keep the edges apart, I determined on a different operation. I passed a knife within the os, and cut out an inverted ∧ portion, including all the thin part left from the sloughing, extending the incision down each side of the fistula. One stitch was passed through the cervix uteri, and two others laterally through the sides of the fistula, and each fastened with a single shot, as described above. Union took place from the os uteri down nearly three-fourths of an inch, greatly reducing the sides of the opening, which I think can be closed by another operation; but the patient being considerably reduced in strength, I thought it best to wait until cool weather before making further effort to cure her.

CASE IV.—Mrs. F. came to me on the 19th of April last. She was 41 years of age, the mother of seven children, two of whom are living. Was confined with her seventh child sixteen months before. Says she was in labour four days, and that her water was not drawn off during the time; child stillborn. Since delivery has not been able to retain her urine.

Examination.—I found union between the root of the urethra and the posterior wall of the vagina, preventing the introduction of the speculum. I divided this, and found three lines of the urethra gone, and an opening in the neck of the bladder capable of admitting only a very small catheter.

Operation.—I pared the edges freely, and brought the bladder down so as to cover the lost portion of the urethra, introduced five sutures, a part of which were fastened by the single shot, and the others in the usual way. The patient was unusually restless, and on the fifth night got the catheter out, and notwithstanding my strict injunction to apprise me immediately should that accident occur, her husband permitted it to remain out until morning; the consequence was that, before the catheter was reintroduced, a slight escape of urine had taken place, caused by an accumulation of water and the consequent giving way of a small portion of the newly formed cicatrix. The stitches were removed the seventh day, and union found entire, except at one point, where there was an opening which permitted the urine to pass drop by drop. This I closed by another slight operation, and on removing the stitches on the sixth day found union perfect.

ART. V.—*Cases of Disordered Menstruation producing Phenomena simulating the Symptoms of Grave Diseases.* By I. MOSES, M. D., of New York.

A MOST interesting case of vicarious menstruation having come under my treatment during the last few months, I was induced to look back through my records, and, in so doing, found several cases of interest, which I propose to add to the number already recorded in the medical

journals. Very little has been given in the writings of our best authors concerning this form of disordered action, except a short statement that it occurs, and the history of a few cases; nor do we find any attempt at explanation of the singular phenomena which are observed. We hear of every tissue secreting the blandest and minutest moisture, pouring out blood in great quantities at the menstrual nisus, and again resuming its naturally quiescent functions, only again to wake angrily at the re-approach of the menstrual period; and yet these tissues and organs suffer no injury, and retire modestly to their proper sphere of action as soon as the recreant uterine apparatus is brought to its usual and accustomed propriety.

It is related of a female who did not menstruate that every month her cheeks became unusually red, and, remaining so for a few days, relapsed into their accustomed hue. Epistaxis, hæmatemesis, hæmoptysis, hæmaturia are the most frequent forms of vicarious hemorrhage; but the eyes, eyelids, auditory canal, gums, mamma, umbilicus, hæmorrhoids, the scalp, and ends of the fingers are the sources of hemorrhage. Old ulcers and cicatrices sometimes take on menstrual action. Of all these, there are recorded examples. The lungs and stomach are more frequently the organs of perverted action. The vicarious flow is generally shorter in duration, or less in quantity, and in many cases both; and then again, on the other hand, it may be both more abundant and longer. A sense of fulness or congestion is often experienced at the seat of these hemorrhages for a few days previous to the occurrence of the discharge, but again no warning will occur.

It has been attempted to be proved that the blood which flows at these periods is different from that which would be produced at any other time; but there is no satisfactory evidence of its peculiarity. No unfavorable effect seems to be the result of these abnormal hemorrhages, no matter what organ may be the seat. A case is recorded in which a nun, who had amenorrhœa, coughed up blood, more or less, every month for twenty-five years, without any modification of her general health. There is a case recorded by Pinel, and quoted by Watson in his lectures, in which a female menstruated vicariously from her fourteenth until her fifty-eighth year. Dr. Latham also mentions a case where a female menstruated from her stomach until the occurrence of pregnancy, when it entirely left her.

Perhaps the only benefit to be derived from a history of such cases is to prompt the practitioner to look, in all inexplicable symptoms arising in females, to their generative organs; and, as a prelude to all other treatment, bring them, when altered, into the natural condition; and, of the value of so doing, the history of the following cases will abundantly testify:—

CASE I. *Vicarious Menstruation from the Umbilicus.*—Catharine ——, æt. 16, native of one of the Eastern States, has always been a stout, healthy girl, and is now full in figure, and womanly developed, with bright face and rosy cheeks; has suffered lately with severe headache and torpid bowels;

has never menstruated. A few months ago, a slight oozing of blood took place from the umbilicus; and every month since then it has returned with general symptoms of plethora.

It will be sufficient to say that low diet, active exercise, decided cathartics, and remedies addressed to the excitation of the uterine discharge, soon established her natural periodic flows.

CASE II. *Vicarious Menstruation from the Skin.*—Ellen Chambers, aged 26, native of Ireland, and unmarried, of nervo-phlegmatic temperament, light sandy hair, dull, pale complexion, and full figure, has suffered from irregular menstruation for several years, with slight leucorrhœal discharge. About a year since, her menses entirely stopped; and soon after an eruption began to make its appearance on the neck, extending to the axilla, to the folds beneath the mammæ, and in the inguinal region. She used various articles under the direction of her physician, which seemed to relieve her for a time, but the eruption, which was vesicular in character, would again break out, and she noticed that this occurred about the time when she ought to have been *unwell*. When I saw her a few days before her anticipated exacerbation, the eruption was dry and scaly, as if nearly healed. I determined to leave her alone, so that I might observe the phenomena which were anticipated. At the approach of the period, a deep redness spread itself over her neck and on the parts referred to before, with pricking, burning, and itching, and the next day a glossiness over the whole, caused by the eruption of small vesicles, which soon began to discharge copiously a thin yellowish sticky fluid, which either dried, and formed a crust, or wet the handkerchief covering the parts. The same course was observed in all the localities referred to. The discharge was far more profuse than would have occurred in a case of ordinary eczema. The general health was not at all affected, except that the patient was "languid." The continuance of the discharge was about the same as a prolonged menstruation, lasting about a week.

A recurrence of these phenomena was observed twice before her menses were restored to their natural channel. Hip-baths, electro-magnetic currents, small blisters inside the thighs, and emmenagogues were used. Her menses were at first scanty, but finally she enjoyed perfect health.

CASE III. *Vicarious Menstruation from an Ulcer on the Head.*—Caroline S——, aged 18, native of Massachusetts, unmarried, well developed, of sanguine temperament, bright colour and dark auburn hair; has not led a perfectly virtuous life, though she has not been dissipated, having resided in the city only a short time. On investigating her case, I found her suffering from two very extraordinary diseases. Her menses had never been regularly or fully established; they had been scanty and painful. About four months ago, they entirely stopped. Soon after, an eschar on her head near the vertex, which was the result of an injury when a child, and which, up to the present time had remained perfectly quiescent, began to trouble her; at first painful, and then opening again, began to discharge a sanious fluid. This occurred at the menstrual epoch; but its connection did not strike her until her attention was called to the fact.

This young woman was the subject of a complete procidentia uteri. The entire organ when not supported, dropped externally to the vulva, somewhat enlarged in size, but healthy in color and texture, the os tincæ small and round. This had been gradually coming on for a year, protruding

more and more and perfectly reducible. She had at first worn a pessary; but it only produced irritation and did not prevent the procidentia. During the period she was under my care, I confined her mostly to a recumbent position, with an abdominal supporter to take off the weight of the intestines and vaginal enemata of decoction of white oak bark, a favorite remedy of mine in most cases of uterine and vaginal relaxation.

This case was very obstinate, and for several months resisted treatment. The ulcer on the head never entirely healed, but during the intermenstrual periods became dry and covered with a dark scab. On the approach of the nisus, the scab cracked, peeled off, and left a surface as large irregularly as half a dollar, secreting a sanguineo-purulent fluid.

The case passed from under my observation without any material change. The procidentia did not trouble her as long as she continued to wear the supporter.

CASE IV. *Vicarious Menstruation from the Lungs and Intestines.*—Mrs. L. E. L——, aged 25, native of New York, tall, of full figure, and having every appearance of good health, of a melancholic temperament. About four years ago (1854), her menstrual functions became deranged, less in quantity, lasting a very short time, and finally ceasing entirely. About this time, she began to have pains in the chest and left side, cough, and hæmoptysis. She then made a sea voyage, and had a severe illness (cholera), from which she recovered. The same symptoms of pulmonary trouble have continued irregularly. About two years since, she began to be affected with dysentery, which has been almost constant ever since, both the hæmoptysis and dysentery coming on about the menstrual nisus, or being more abundant at that period. Occasionally, she would have interludes of complete freedom from either, and sometimes from both. At times, a menstrual effort would take place, lasting an hour or a day, and then ceasing. During all this time (October, 1858), Mrs. L—— has been constantly increasing in weight, and weighs one hundred and forty-eight pounds.

During the last six months, there has been but two feeble efforts at menstruation, and none at all for four months. About a month ago, at the last period, she had a more copious hemorrhage than usual from the lungs. There has been more or less hæmoptysis and dysentery during the last few days (October 20th). She has been treated for both these symptoms by several practitioners, and considered to be a victim of tubercular disease, which was destined at some time to prove fatal.

Upon a thorough investigation, as all these discharges seemed to take the place of and in fact form the menstrual flow, I did not consider that any medicines were indicated, but those which had a tendency to act directly on the uterus. As her regular menstrual epoch occurs about the seventh of November, I propose to begin her treatment. A married sister of this lady suffers in a similar manner.

November 1. I directed the patient to take a hot hip-bath every night, to keep the pelvis covered with flannel during the day, to take her usual exercise in clear weather, but remain home when it was cold and wet—to have electro-galvanic currents through the pelvic organs, morning and evening, for twenty minutes, and take a pill of iron and ergotine three times a day.

11*th*. Mrs. L—— called to-day to report that she pursued the above course faithfully, except that the electro-galvanic current was omitted on two days in consequence of the instrument getting out of order. The

menstrual flow commenced on the 9th, and continues healthy in character and quantity, and not attended with any unusual pain; and, to use her own words, "she hardly knows herself."

16*th*. Called to-day to report that her menses continued, during five days, natural in all respects, and that there has been no hæmoptysis since the 28th ult. Her bowels also have been natural, without uneasiness, until last evening and this morning, when she has had pain, but no dysenteric discharge. She feels very well.

December 6. Has suffered a good deal from fulness about the loins and back. On the 3d, her menses came on, but only lasted about an hour. At the same time, she suffered from diarrhœa, which lasted two days, thus taking the place of the menstrual flow.

23*d*. Menses began on the 16th, and ceased on the 20th. Diarrhœa and severe pain co-existed, both of which ceased with the menstrual flow.

January 24. The regular period should have been about a week ago. For several days previous, she had followed the same course of hip-baths, electro-galvanic currents, ergotine, &c. &c., but without success. On my visit this morning, I found her in bed, having suffered, for the last five days, violent pain in the lumbar region, like labour pains, extending down the thighs, with general febrile movement, loss of appetite, and restlessness. Her tongue is furred and pasty; skin warm, but moist; pulse 100, full, soft, and compressible; fulness and some tenderness in the hypogastric region. I proposed a further examination, by speculum, into the condition of the uterus, feeling confident that there must be some local inflammation. The lady readily consented to do anything that would contribute to her relief. I therefore appointed a time, and directed some leeches to be procured. At 2 P. M., I made the necessary exploration, and found the neck of the uterus very much enlarged, of a deep crimson colour, and a patch of granular surface, somewhat larger than a twenty-five cent piece, encircling the os tincæ; more on the anterior lip, and the upper part of the vagina filled with thick, tenacious, muco-pus. The leeches were applied, filled, and after bleeding promoted by a hip-bath.

27*th*. Feels much better in all respects; less pain in the limbs, and none in the back; some headache; *no menstrual discharge, no hæmoptysis, and no trouble of the bowels*. This is the first period where one or the other has not occurred for four years. On speculum examination, the neck is still swollen, and dark from congestion; a broad, irregular, granular roughness around the os tincæ, to which a strong solution of argentum nitratis was applied by soft sponge, and injections of infusion of white oak bark twice a day directed.

31*st*. There has been a slight red discharge for the last twenty-four hours. On introducing the speculum, the granular surface poured out blood freely. I applied the solid nit. argent.

February 2. The discharge noticed above turned out to be menstrual, and continues to the present time, with decided relief to all her symptoms, except pain and bearing down in the back. The discharge is very copious and clotted.

4*th*. The flow is now ceasing, having been free for over six days, with relief to all pain and fulness. She is much better, though depressed in spirits on account of family griefs. On examination, the neck is very much diminished in size and paler, the granular ulceration much less florid, a menstrual discharge, darker than natural, from the os, which is broad and patulous. Sol. nit. argent. applied.

19*th*. The caustic solution was applied on the 10th, 14th, and to-day. The neck is still more reduced, pale, and soft; the ulceration contracted and smooth; little or no mucous discharge; general health good.

On the morning of the 13th of March, the menses appeared, and continued, until the evening of the 15th, quite free and natural, attended with some pain in the back, and free state of the bowels.

The next menstrual period occurred about the proper time, attended with the same free state of the bowels, and preceded by some lumbar pain. Her general health is excellent; and she considers herself well. The system will soon accustom itself to the re-established natural flow; and I presume the bowels will then no longer be free at the monthly flow.

June 1. Her health is completely re-established.

A somewhat similar case to the above is recorded in the *Edinburgh Medical Journal* for April, 1859. A lady, aged 53, had several attacks of hæmoptysis, coming on regularly at the monthly period, attended with cough and pain in the side. The chief point of interest in this case is the late period of life at which the vicarious hemorrhage occurred.

CASE V. *Vicarious Menstruation from the Stomach.*—Mrs. M. C——, aged 26, married, native of New Brunswick, has suffered from dysmenorrhœa for the last six years; has been married, and had a child about eighteen months ago. Following her delivery, she had inflammation of the bowels and uterus, and since then has suffered from deficient menstruation. For the last eight months, she has raised blood quite freely, generally coming on about the menstrual period. She suffers more or less from headache, pain in the back and loins, and shooting through the chest. No distinct signs of any disease of the lungs; bowels usually constipated.

July 17. Yesterday, a discharge from the vagina took place of an offensive character. She has frequent desire to pass water, but passes a little at a time; complains a good deal of tenderness about the lower part of the bowels; vomited last night about two tablespoonfuls of blood; bearing down pains in the back and pelvis; her chest felt better while the discharge was on, but worse since it stopped.

31*st*. Has suffered with all the symptoms of great congestion about the pelvic organs; vomited yesterday afternoon some blood; great bearing down in the pelvis and lumbar region, down the thighs and ankles. Free cupping to the lower spinal region ordered.

August 3. Has been cupped every day over the lumbar region with marked relief. The speculum disclosed no enlargement; small granular ring around the os tincæ, with a constant discharge of thin muco-pus. Her appearance is that of perfect health.

September 15. A continuance of counter-irritation and depletion from the lumbar region with blisters and croton oil entirely relieved the internal congestions; the os tincæ was twice touched with the caustic pencil; and being now in a very comfortable and healthy condition with return of menstrual function, she passed out of my observation.

CASE VI. *Amenorrhœa, with Enlargement of one of the Hands and Forearm.*—About fifteen years ago, I saw a case of a young woman who presented herself at various public institutions, and was, if my memory serves, at one time an inmate of Bellevue Hospital about the year 1845. From cold and wet, her menses had ceased; and soon after she was seized with swelling of one of the hands and forearm, foot and leg, resembling elephantiasis, for which she was under treatment for two years.

I was informed that, after resisting all treatment, and it being proposed to amputate the arm, she subsequently entirely recovered by means directed to bring on the catamenial discharge. As I have no notes of this case, and it only impresses itself on my mind in connection with this subject, I must apologize for so meagre a history.

CASE. VII. *Amenorrhœa giving rise to the Symptoms of Tetanus.*—E. P——, aged 19, native of the city, suffering from amenorrhœa, was seized, January 19th, with a violent attack of spasm, rigid closure of the jaws, and at first she was supposed to have trismus; but, after some little time, it was found on trial that the jaws could be separated, the patient struggling very much against it. The case rather leading to a suspicion that it was hysterical in character, an emetic was administered, and a fetid enema, both of which operated well, with complete relief to the symptoms.

CASE VIII. *Amenorrhœa producing Aphonia.*—Mary Ann D——, aged 25, native of Connecticut, thin and pale, of highly nervous temperament, had always suffered from irregularity, and latterly from amenorrhœa; subject to hysterical attacks; has been gradually losing her voice, and now (May 27th) is only able to speak in a low whisper.

She was subjected to the usual course to bring back the healthy flow, but without success. She took sulphate of zinc in large doses, Fowler's solution, electro-galvanism through the neck and tongue, shower-baths, and a host of remedies without success, and was then directed to go into the country. While there, a steam-doctor gave her a *medicated steam* bath; and, a few days afterwards, her voice returned as naturally as ever.

CASE IX. *Amenorrhœa inducing Sciatica.*—Ann D., aged 19, single, arrived from Ireland in April eight months ago; was unwell a week before she left home, and since then has been regular but three times. About a fortnight ago her menses came on, but suddenly stopped from some cause (she thinks she took cold), and very soon she was seized with sharp pain in the small of the back, and down the right leg as far as the toe; subsequently, in the left leg, which has continued since more or less severe. Now complains (Nov. 1), of severe pain in the lumbar region, extending over the nates and down both extremities, which she compares to sharp penknives running into her. There is extreme tenderness on pressure over the lumbar vertebræ and sacrum, extending equally on both sides and over the nates, and to a less degree all over the limbs; there is no redness or swelling of any of the joints—no general febrile movement.

She was treated by electro-galvanism, cups, and blisters, and the usual remedies, and in the early part of January was completely relieved, with regular return of her catamenia.

CASE X. *Amenorrhœa producing Chorea and Hysteria.*—Sarah C., aged 22, single, lately arrived from Ireland, since which she has felt weak and stupid. About two weeks ago, was obliged to leave her work, complaining of nervous fits and great debility, with twitching of the limbs; bowels torpid; menses coming on at regular intervals, but *exceedingly small in quantity.* The convulsive twitchings have been constantly increasing, affecting all the external muscles and the *diaphragm.* She is subject to attacks of laughing and crying. When she walks she stoops, and now and then stops, putting her hand to her stomach. General health good, no febrile excitement, and aspect natural.

September 5. Has taken for a week past iron and aloes, valerian and hyoscyamus, without any decided alleviation of her symptoms; twitching of the *muscles of the abdomen* is the most formidable symptom; she walks better.

On the 10th, her catamenia appeared scantily, after the application of electro-galvanic currents. On the evening of the 11th, she had a violent attack of hysteria, which lasted six or eight hours. The menses continued in small quantities for two days, during which she had constant and severe hysterical paroxysms. She was put upon the arsenical solution and active cathartics. On the 29th, her chorea and hysterical paroxysms, which had continued, but gradually diminishing in violence, entirely ceased; her menses came on, the discharge being natural, not attended with clots, nor with more pain than usual. She complained of great debility. Being treated in a hospital, she was sent in the country to recruit.

CASE XI. *Epilepsy produced by Amenorrhœa.*—Ann McCarty, aged 19, native of New York, entered the New York Hospital, Aug. 10th, 1844, while I was Resident Physician, having been suffering from amenorrhœa since December. Her general health continued good until about three weeks before, when she was suddenly seized with an epileptic convulsion, which lasted a few minutes, and a second convulsion on the same day. She recovered so as to attend to her work until the 6th, in the evening, when she had a third convulsion, and again yesterday morning (9th). During the intervals she felt as well as ever. She had slight hysterical crying fits. Has been bled and purged. On admission, she replied to questions rationally, but slowly and with effort; her articulation thick, complained of partial loss of motion on right side, with subsultus of right hand and arm, and sudden spasmodic contraction of the muscles of the fingers; skin and pulse natural.

August 11. Remained tranquil, after admission, until 2 A. M. to-day, when she was seized with convulsions, which recurred every fifteen or twenty minutes until 7 A. M.; head and extremities chiefly affected, mouth drawn to right side, fingers and toes strongly flexed, great restlessness, and could not be induced to speak. Her pulse became excited, and head hot. Cold to be applied to head; and cathartic given.

2 P. M. Continues in a drowsy state, indisposed to talk, considerable heat of head and skin; pulse 80, full and soft; some intolerance of light. She was bled from the arm ℥xij, her head shaved, and cold applied. Cathartic not having operated, a stimulating enema was ordered.

On the 12th, she remained stupid and unconscious, until after the free action of a cathartic, when she became quite bright; no pain in the head; pulse and skin perfectly natural; a small ulcer of left cornea noticed. Leeches were applied to temple, and opium wash to the eye.

15*th.* Has appeared perfectly well until last night, when she had an hysterical attack. Since last date, remained comfortable, except occasional vomiting up to September 2d, when she began to complain of pain in the head and dizziness, with increasing difficulty of articulation, heat of head, and febrile pulse. Twelve leeches were applied to the temples, followed by cold water, stimulating enema given. This being the period when her menses ought to appear, blisters were applied inside the thighs, electro-galvanism to the pelvis, and shower-baths to the head. This course was pursued without success. She remained comfortable until the 22d, when she had an attack of convulsions, affecting the right side of the face, upper

and lower extremities, without numbness or loss of power, or more pain in the head than usual.

October 2. This being the catamenial period, the same remedies were resorted to as last month, with bleeding from the feet, but again without success. On the 6th, had a regular epileptic convulsion, affecting, as before, principally the right half of the body; complains much more of pain in the head; skin and countenance not presenting any unusual condition; pulse 112, rather full and hard. Twenty ounces of blood were abstracted. Constant convulsions during the night and day of the 7th. She keeps up a shrill cry during the attacks, which are not attended with loss of consciousness, knowing when they are coming on, and when she is in them. She lost ℥x more blood last night, and ℥ix this morning, the convulsions continuing as frequent, if not more so, than before; has also bled some from the nose and mouth. Yet she answers intelligibly in a bright and plain manner. Pulse 144, small.

Has been taking camphor and hyoscyamus. She had only one convulsion on the 8th, and none again until the 16th, when she had five; on the 17th, five; and, on the 18th, six, with loss of senses, both sides being affected. When free from convulsion, she does not complain of headache nor dizziness. Her countenance is pale, but lively, and is perfectly sensible. Her fingers, especially those of the left hand, are contracted. She stutters a good deal in speaking. From the 18th, every day, she became worse and worse, the convulsions occurring from four to five times every day, with progressive paralysis of all her muscles and her nervous power, losing the power of protruding the tongue, or using her limbs, passing her feces and urine involuntarily; double vision; at times, dull and lethargic, and then, again, calm, and answering rationally.

November 4. She continued to grow worse; and her case was looked upon as desperate. Her condition was most deplorable, her convulsions not quite so frequent, but for several days has been furiously delirious, requiring the straight-jacket to keep her in bed. On the 6th, she began to show some improvement; the paroxysms were less frequent; and she lay more quiet, with closed eyes, face pale, pupils contracted, and insensible to light; no answers when spoken to; at times, revives, and appears to recognize those around her. From this date (6th), she became more comfortable every day; her convulsions ceased; at times, perfectly rational, and then again acts strangely, and asks foolish questions. She has recovered her sight, and uses her arms as well as ever, but does not stand or walk.

14*th*. For some days she has been able to set up the greater part of the day; can sew; her intellect is weak, but intelligence good; able to walk about; appetite good. She finally entirely recovered.

In fact, after a most desperate struggle against this awfully frightful disease, of which we unhappily know so little, and being dragged to the very threshold of death, with loss of mind and of every function, a mere breathing lump of clay, we watched, and with such pleasurable feelings as no one but the physician can appreciate, her slow resurrection to intelligence and physical health.

During the seventeen years I have been engaged in the study and practice of my profession, I have met with but one other case—and that one of puerperal convulsions in a lady seventeen years of age, the wife of an army officer—of equally appalling symptoms, and recovery following. This case

was vividly brought to my mind by two cases milder in character, which have occurred in my practice during last year, both of them young, unmarried women, about twenty-two years of age, who had suffered for months from amenorrhœa, and to whom I was called suddenly while in convulsions. I treated them afterwards; and, the catamenia being regularly and healthfully restored, they had no return of convulsions. I do not think it necessary to relate their histories in detail, as the above case (XI.) sufficiently illustrates this type. It is so difficult to determine, in many cases, where the functional disturbance ends, and the organic disease commences, what is sympathetic, and what is pathological, that our acumen is subjected to the keenest proof. We hesitate to do, and yet not to do, is perhaps to lose the only chance for our patient.

We find, at one time, the burning head, the injected bright eye, delirium, rapid, bounding pulse, frightful convulsions, and, an hour or two after, a clear and intelligent look, and calm mind, a natural pulse, and no complaint of pain. Who can explain these great and sudden changes? What is it that kindles up these demoniac fires in this brain-seat of the heavenly gift, the repository of that which makes us immortal beings, and responsible to the Deity for our good and evil actions? And what is the material, and what is the fluid of the brain and nerve tubes, which sends such awful electric-telegraph messages to the distant organs and apparatuses of the human cosmos? The mysteries of life and death are equally uncertain and inscrutable.

I have before me, among my records, the detailed notes of two very interesting cases, in which it was never satisfactorily ascertained whether there was actual phrenitis or not. They were treated, however, by what might be very well termed a "peace congress of remedies;" for I find depletion and antispasmodics prescribed on the same day—leeches outside the head, and valerian and hyoscyamus inside.

In one of these cases, that of a young, unmarried girl, of eighteen years of age, I find recorded, on one day, as follows: "Intellect much impaired; complaining of intense pain in back of the head, which is hot; pulse 100; vomiting; eyebrows contracted. To have her head shaved, blister applied to the nucha. Cal., gr. ij, q. 4 h." On the day following: "More intelligence; answers questions well; no contraction of brow; head no hotter than the rest of the body; feels dizzy." A little further along, I find her using gum fœtida, and hyoscyamus, and tr. guaiaci ammon., and iron, and the remedies usual for bringing on the catamenia.

The other case is that of a married woman, forty-nine years of age, whose catamenia ceased suddenly, giving rise to hysterical symptoms of mild character at first, but increasing in severity until the date when I find the following record: "This morning, at 4 o'clock, had tetanic spasm of both legs, with much pain, and afterwards *opisthotonos*. Paroxysms of *opisthotonos* occurred every *fifteen* minutes, accompanied by rigid contrac-

tion of the arms. She had *ten* such spasms in twelve hours; lies without consciousness; eyes glassy; elbows of both arms contracted, semiflexed, and cannot be straightened; both knees semiflexed, rigid, and ankles in same condition; thighs bent and stiff." From this she recovered under the use of musk and hyoscyamus; and her *pulse* is recorded as only *sixty-four*, and *soft* and *regular*. With its Protean changes, the case oscillated for many days. On one day, "no return of convulsions, pulse soft and regular, countenance more natural, and intellect perfect;" and then, again, "has had three or four violent convulsions; limbs bent, and mouth closed rigidly; back arched, pulse 100, respiration 50 to 60 per minute." And so the case lingered along for two months, when she was considered well enough to discharge; though it is not stated whether there was any return of the menses, a circumstance scarcely to be expected in one who had passed beyond the usual climacteric age. The notes of these two cases were taken by me under the dictation of the late Dr. Swett, attending physician of the New York Hospital, and are too minute and copious in detail for publication in their original form, but, in reality, present perfect histories of the disease.

The question very naturally arises how are such cases to be treated? I answer, candidly, I do not know; neither have I ever seen any one who did. Age seems not to have dependency, for the most violent forms of perverted nervous action occur (from before puberty until long after the child-bearing period) in the maiden and married woman, in all temperaments, among the rich and poor, in the milkmaid and the votary of fashion. But there are certain circumstances which render their attack most frequent. My experience teaches me that it is not so common among those brought up and living in luxury, nor among those who are born and live in poverty. It is rather in the transition state from one to the other, occurring near or during the parturient age. Thus the great majority of cases which have fallen under my observation were in young servant girls, who have lived to the age of eighteen or twenty, in the country, on plain food, and kept regular hours. They arrive after a long voyage, or from our interior towns, and hire out in families where their entire course of living is changed. They feed on badly-cooked articles, more meat than they are accustomed to, drink strong tea and coffee at irregular times, sleep in close and hot rooms, sit up late, and arise early, so as to obtain only from five to seven hours of disturbed and uneasy sleep, generally neglectful of their persons and bowels, and, in addition to all, subjected to such influences as excite the passions.

So, too, in the educated and refined, or those who have never known the necessity of denying themselves the gratification of every luxury and caprice, who have had one perpetual feast since they were weaned, aye, and some even from their birth, whose only occupation has been to help the fleeting hours of youth with music and the dance. In these, I say, the dark hour of adversity brings the sense of bitter disappointments, heart crushings, the

memory of joys gone never to return, neglect of the world, poverty, labour, and the future, naught but a weary journey to the life hereafter, when the spirit may throw off its dull clog.

For such, I say, who can minister? Could we be magicians as well as physicians, and bring back the fresh breezes of her mountain home, her simple habits, and innocent fancies to our "white slave," wealth, and luxury, and friends to the crushed, then would we have remedies at will; but at best we must administer such poor comfort as we can, soothe with anodynes and antispasmodics, quell the heart's fierce commotion, and coax the deranged functions again into gentle, steady gait, imitating the skilful angler who gently winds his reel, and again gives line, until the hooked trout is landed safely.

The treatment for amenorrhœa is familiar to every physician; and I cannot recommend any one remedy or any special mode as preferable to the other. We all have our favourite prescriptions, and have faith in them. Hot hip-baths, and the electro-galvanic current through the pelvic organs, have been for many years my principal reliance, and in very many cases have proved all sufficient. The ferruginous preparations are all important in giving the blood its vital properties, upon which depend the healthy performance of organic function, and healthy muscular tonicity. As the nerve tissue and fluid are formed from the blood, a healthy state of these is all necessary to the exercise of the rational and moral powers; for the brain, we are taught, is the organ of the intellectual and moral faculties. It must exert its powers of volition, or the muscles have no longer a guide; and paralysis or spasm results.

Careful hygienic management, looking to the removal of predisposing and exciting causes, is the most necessary object of our aim. Agreeable mental and physical exercise, pure air, and simple habits do more than all the medicines in the pharmacopœia.

I have involuntarily allowed my pen to occupy too much space, and here close.

NEW YORK, June 1, 1859. 724 Broadway.

ART. VI.—*Notices of the African Station.* By GEORGE CLYMER, M. D., Surgeon of the African Fleet. Extracted from two Communications to the Medical Bureau, during the cruise of the U. S. Ship Jamestown, in the years 1855, 1856, and 1857. Communicated by WM. WHELAN, M. D., Chief Bureau Med. and Surg., U. S. Navy.

U. S. FLAG-SHIP JAMESTOWN,
PHILADELPHIA, June 6, 1857.

SIR: Having completed her cruise, as the Flag-ship of the Squadron on the west coast of Africa, the Jamestown has returned to Philadelphia. * *

The Jamestown was commissioned on the 22d Feb., 1855, and sailed from Philadelphia on the same day for Norfolk, which she left on the 6th April, and finally, on the 9th June, sailed from Key West for her station on the coast of Africa. She reached the station, on the 8th July, at Madeira, and left it on the 1st May last at the Cape Verds, and will be this day, 6th June, put out of commission, after a cruise of two years, three months, and fourteen days.

During a stay of five weeks at Norfolk, 44 patients were sent, temporarily, to the hospital for treatment, 30 of whom were returned to the ship cured, the remaining 14 continuing under treatment at the hospital at the time of our sailing. Sixteen patients, invalided by medical survey, were sent home from Key West, and ten from the station. * * *

No death occurred on board of any of our own ship's company, whether from sickness or accident.

The average number of the ship's company during the cruise has been 221, the whole number of sick 1106, and the average daily number of sick $13\frac{249}{834}$.

Although during part of the cruise the number of sick was high, yet, in no other ship in which I have sailed, has the number of serious cases been so small. There was no epidemic sickness of any kind, no case of malignant fever or of dysentery, and no inflammatory disease of a high grade. Notwithstanding this general exemption from serious sickness, the tone of health has not been high; and we return from a cruise which has been too long, and which has dragged heavily away, with impaired vigour of body, and with, I fear, some predisposition to sickness arising from the debilitating influences of a station everywhere warm, and in most places hot, and from the depressing effects of its dull monotony and general uninterestingness, rarely, except in a few places, tempting a visit to the shore, whether for recreation or for curiosity, and dooming us to a shipboard life during nearly the whole cruise. * * *

I am, very respectfully, your obedient servant,

GEORGE CLYMER,
Surgeon of the Fleet.

WM. WHELAN, M. D.,
Chief of the Bureau of Medicine and Surgery,
Navy Department, Washington, D. C.

The following extract is from a communication to the Bureau, two months before leaving the station.

U. S. FLAG-SHIP JAMESTOWN,
PORTO PRAYA (CAPE VERDS), March 1, 1857.

SIR: On the evening of the 1st November last, the Jamestown got under way from Porto Praya, to make her second cruise down the coast, and sailed for Sierra Leone, which, at the distance of 710 miles, and in lat. 8° 30′ N., and long. 13° 18′ W., she reached on the evening of the 15th. On the fifth day from Porto Praya we ran out of the northeast trades into the

zone of light breezes, variables, and calms, which, stretching along the coast on the outer border of the trade-winds, we did not escape from till passing Cape Palmas in lat. 4° 22′ N., and long. 7° 44′ W., we fell into the southwest trades that swept up eastward along the coast of Guinea.

This funnel-shaped belt possesses a climate differing essentially from that which is fanned by the northeast or by the southwest trade-breezes. This difference in the climate we experienced this year as the last.

The rainy season on the coast, travelling with the sun, is reversed on the opposite sides of the line. On the north of the line, it stretches from May to October, with an intermediate dry period of a few weeks at midsummer, and is introduced and closed by tornadoes. These, occurring at the commencement and termination of the rains, conduce essentially to health, by driving, in a tumultuous sweep, from off the coast, the stagnant and sultry atmosphere loaded with miasmata from the reeking earth.

The regulation of the cruising, according to the season, has reference chiefly to the north of the line, where the rains and sickness are much more considerable than towards the southern part of the station; at which latter, vessels are little incommoded by either, at any season. The two accompanying *Reports* from the St. Louis show that, during her stay on the *north coast* in the latter part of the 3d quarter, she had seventeen cases of fever; while she had but two, and those relapses, during a stay of probably two months on the *south coast*, in the 4th quarter.

The months of December, January, and February, are the dryest and most pleasant on the north of the line, and those in which, so far as health and comfort are concerned, it is most desirable to perform a cruise along that part of the coast. Vessels, therefore, which are fitted out for the African squadron should, with a view to health and efficiency, reach the station by the beginning of November, so as to leave Porto Praya by the middle of that month on five months' cruise down the coast. They would, thereby, preserve the ships' companies from the wet and sickly season of the north coast, much more hazardous than that of the south, and probably also from the fevers and dysenteries which, though not confined to that season, are yet more prevalent in it than in the opposite one.

With whatever exemption, however, from malignant disease a ship's company, uninured to an intertropical climate, may return to Porto Praya from a lengthened cruise along the coast, its physical tone and strength will not fail to have become essentially impaired, so much so as to render a resort to an extra-tropical climate necessary, in order to recruit for a second cruise along the coast. This intermediate recruiting season of a few months may, therefore, with great benefit to the health, the vigour, and the spirits of all on board, be passed at the salubrious windward islands of the station. Without this invigorating process to build up a ship's company thus impaired, by the unavoidable debilitating influences of the climate, in physical tone, and moral and mental energy, a second voyage

down the coast, in immediate sequence of the former, could hardly fail to add to the existing debility, and thereby greatly to predispose to the endemic sickness of the various localities; from which, from the salutary measures now so judiciously pursued, our ships' companies are, happily, to a great extent exempted.

These conditions belong by nature, and therefore necessarily, to this station, embracing, as it does, a region as hot and insalubrious as almost any other in the world, and so unfriendly to the stranger, that more than nine-tenths of the negro emigrants from our southern States require a residence of two or three years before they can acquire a sufficient degree of acclimation to exempt them from occasional attacks of the endemic fever, and to enable them steadily to labor; whilst, to the white man, absolute acclimation, and entire exemption from the endemic fevers and dysenteries, are so nearly, if not quite, impossible, even after a residence of eighteen or twenty years, that I could not learn of a single instance in which they had been attained.

To contend against these adverse circumstances, and, in spite of them, to preserve the health and efficiency of the ships' companies, have, necessarily, ever been the dominant idea, the constant endeavour, in the administration of our squadrons on this station. This happy result has been effected to an almost unlooked-for degree by a strict observance of the judicious sanitary regulations of the department, and, in particular, by the avoidance of shore after sunset; by the employment of Kroomen to water and provision ship, and to perform boat and other outside duties of the ship; by the avoidance of unnecessarily fatiguing duties on shipboard; by careful exclusion of unripe fruit; by a free use of good water; by every attention to cleanliness, ventilation, and proper clothing; by limiting the cruises to eighteen months, or, at most, two years; and lastly, but of high importance, by no ship's performing two cruises down the coast, without an intermediate visit to the Canaries and Madeira to recruit.

To these comparatively cool and healthful islands, lying beyond the tropics, and fanned by perpetual trade-breezes from over the ocean, and at which alone, at least north of the line, on this station, the sailor can ever put foot on shore, our ships should repair on their return in the spring to Porto Praya from a cruise down the coast.

After passing there the summer months and the early part of the autumn, so insalubrious on the coast north of the line, which is our principal cruising ground, they would become reinvigorated to start afresh in the middle of November from Porto Praya on a second voyage down the coast; on their return from which to Porto Praya, in the following spring, they should sail for the United States, after an eighteen months' stay on the station; the relief arriving out in the fall.

The steady pursuance of this system, dictated by the character of the climate, has, in the exact degree in which it has been conformed to in our

successive squadrons, happily converted a station, once regarded as the grave of the white man, and formerly so fatal to the officers and sailors of the British navy, into a station exceeded by no other, visited by our national ships, in the small amount of its relative mortality and malignant sickness.

The Jamestown, as I have stated, left Porto Praya, for her second cruise upon the coast, on the 1st November, and visited, in succession, Sierra Leone, Monrovia, Cape Palmas, Elmina, Cape Coast, Accra, and Quitta, whence, in lat. 5° 55′ N., and long. 1° 14′ E., she returned to Monrovia; from which, after an eight days' stay to wood and water, she reached Porto Praya on the 25th January.

From our departure from Porto Praya till our return to it, after an absence of three months nearly, we encountered but half a dozen showers of rain. This year, as the last, we experienced a marked difference between the weather, and, indeed, the climate, on this side of Cape Palmas, and that to the east of it, along the coast of Guinea. In a few days out from Porto Praya we ran out of the northeast trades into the tract of calms, light breezes, and variables, which stretches along the coast as far to the southward and eastward as Cape Palmas, with the thermometer, at 8 A. M., at from 78° to 82°, with the atmosphere, for the most part, damp, sultry, and oppressive; varied, however, by an occasional dry harmattan from off the coast, with heavy dews, with skies starry overhead, but dusky and cloudy on the horizon, and with the coast at evening constantly overhung by heavy clouds, and illumined by gleams of lightning; whilst, eastward of Cape Palmas, along the coast of Guinea, we were fanned by a steady southwesterly trade-breeze, with the thermometer, at 8 A. M., 78° to 80°, for the most part; the sky unclouded in the day, and at night clear and starry in the zenith, but hazy, and as if filled with dust on the horizon; the atmosphere dry, and soft, and pleasant, with little or no dew at night, and not a cloud, or a gleam of lightning. In a word, from the time we lost the northeast trades, a few days out from Porto Praya, thence from Sierra Leone along the coast of Liberia to Cape Palmas, the weather was oppressively hot and sultry; whilst thence forward along the coast of Guinea, it was, on shipboard at least, quite pleasant.

Such exactly we found to be the character of the weather in these two localities during our cruise at the same season last year as this.

The cruise of last year was extended beyond Quitta as far eastward along the coast of Guinea as Wydah, in lat. 6° 19′ N., and long. 2° 05′ E., thence southward and eastward 420 miles across the Gulf of Guinea to Prince's Island, in lat. 1° 39′ N., and long. 7° 27′ E., and thence onward in the same direction 820 miles to St. Paul de Loando, in lat. 8° 48′ S., long. 13° 13′ East.

During all this latter portion of our last year's cruise, the weather continued, for the most part, especially on the south of the line, dry and

pleasant, such as we now found it along the coast of Guinea. I need, therefore, hardly say that the most disagreeable portion of our cruising ground on this station we have found to be that extending from Porto Praya to Sierra Leone, and thence along the coast to Cape Palmas; whilst beyond that, on the Guinea coast, and especially south of the Line, it was quite tolerable when we were there.

At Sierra Leone, which we reached, as I have said, from Porto Praya, on the 15th of November, we lay securely at anchor in the river, two or three miles from its mouth, and a quarter of a mile from the town, the only harbour, besides St. Paul de Loando, and Porto Grande in the island of St. Vincent, that we have been in on the whole station.

Freetown, the capital of this colony of recaptured slaves, contains a population of 16,000 negroes, and 150 whites, the colony itself numbering 46,000 inhabitants. The town is picturesquely situated on the southern bank of the river, at an elevation, in its lowest part, of 80 feet above its surface, and, in its highest, at two or three times that elevation. It rests on the foot and slope of a luxuriantly verdurous range of mountains, of eight or ten hundred feet in height, the most remarkable on the whole of this almost uniformly low and unvaried coast, and which stretches eastward several miles along the river from its mouth. With the exception of Madeira, it is the most picturesque and beautifully verdurous locality at which we had anchored on the station. It was represented to us by the English officers, and by the English and American residents, as entirely healthful at all seasons, both by day and night; the increased healthfulness, within a few years, being due to clearing and draining the soil, and to improved modes of living. The new-comers, who die, fall victims to intemperance and debauchery, rather than to the climate. It furnishes excellent water, and wood, and an abundant market, possessing advantages in these and in some other respects over every other place on the coast, and at the Cape Verd Islands.

After a stay of six days at Sierra Leone, we sailed on the 21st of November for Monrovia, which, at the distance of 190 miles in a direct line, but 300 by the way we came, and in lat. 6° 19′ N., long. 10° 48′ W., we reached on the 28th. The intermediate coast is remarkable for little but an almost unbroken line of mangrove, swamp, and jungle, with but a single elevation, that of Cape Mount, a conical hill of apparently 1000 feet in height, 42 miles from Monrovia. The necessary unhealthfulness of this line of marshy coast, and of the adjacent low island of Sherbro', midway between Sierra Leone and Monrovia, sufficiently accounts for the fate that befell the early emigrants from the United States at this latter unfortunate locality, a fate not unlike that which, in 1793, befell the wretched settlers in the island of Bulama, at the mouth of the Rio Grande, a few degrees farther to the north.

Monrovia, the capital of Liberia, is interesting as a missionary station,

and as a colony for the negro from the United States. It is planted on a promontory, called Cape Mesurado, washed on two sides by the Atlantic, and on a third by a creek, or inlet of the sea, called the Mesurado River; whilst interiorward stretches an interminable tract of impenetrable mangrove swamp. This, at all times steaming with miasmata under a burning sun, becomes, in the rainy season, a vast morass, covered with mud and ooze from the overflowings of the St. Paul's River and Stockton's Creek, which wind their sluggish way through this flat and miry region in the neighbourhood of the town. It is, in a higher degree than at any other period of the year, after the subsidence of the rains in the autumnal months, and at their commencement in the spring, when the soil is reeking under a torrid sun, and the atmosphere is stagnant, that it becomes loaded with paludal exhalations, which are a fruitful source of endemic sickness, and which, but for the frequent tornadoes at those seasons, might render all this portion of the coast uninhabitable to any except the native.

The character of the diseases here, as elsewhere on the coast, is nearly uniform, consisting, as they do, of fevers of the intermittent or remittent type, and of diarrhœas and dysenteries, often causing, by the frequency of their recurrence, chronic disorders of the viscera, and, in particular, enlargement of the liver and spleen.

I have stated that more than nine-tenths of the emigrants from the United States suffer from the endemic sickness. This is miscalled the acclimating, or seasoning fever, as an attack is an initiation, rather than a prevention; and the treatment, to be effective, must be to anticipate and prevent the attack by *the* remedy, sulphate of quinia.

Whatever acclimation may consist in; whether, as the name implies, it is anything more than a habituation of the system to the climate—that is, to the temperature, the dryness, or moisture, the miasmata, and, indeed, to the condition of the atmosphere in all respects—an attack of fever does not here appear to confer protection or immunity, but rather to predispose to and invite a recurrence or repetition. These attacks are apt to return, at intervals, during the first two or three years of the emigrant's sojourn on the coast, and, in a measure, to disqualify him for much labour in the meantime.

To provide, in a degree, against this drawback to the well-being of the emigrant, the Colonization Society sent from the United States, last fall, two "receptacle houses," capable each of comfortably accommodating one hundred emigrants. One of these has been put up at Monrovia, and the other at Cape Mount, 42 miles northward on the coast.

Here the emigrants who desire it are received on their arrival, and are lodged and fed for six months; after which, they are expected to provide for themselves. Those who are then able to labour, and some who are not, repair to the interior, some twenty or more miles up the St. Paul's River, to cultivate the land, of which the Government gives to each adult five

acres; whilst the poor, the indolent, and the sickly are apt, on coming out of the "receptacle," to loiter and lounge about the town, a tax upon its scanty resources and its charities.

A third "receptacle" sent from the United States, has, this winter, been put up some 60 or 70 miles from the coast, in an elevated and healthy locality. To this, in consequence of the sickliness of the coast, emigrants are to be transferred in boats up the St. Paul's River, immediately from the vessel in which they arrive, without putting foot on the coast. This, it is hoped, will save the health of the emigrants, and enable them, with comparatively little interruption from sickness, to proceed to support themselves by the cultivation of the soil.

I have said enough to convey my opinion that Liberia, with its enervating and sickly climate, was unfortunately selected as the locality on which to colonize the emigrant negro from the United States. It stretches some 400 miles through a low tract of variables and calms, which no trade-breeze ever refreshes, and which is exceeded by no other, and equalled by few on the coast, in its oppressive heat, its sultriness, and its unhealthfulness, constituting it little better, in its effects on health, than an overheated, ill-ventilated swamp. These are essential drawbacks to its prosperity.

We found, throughout the entire extent of the coast of Guinea, during our two cruises, a dryer, clearer, cooler, fresher, and more elastic atmosphere, perpetually fanned by the southwest trade-breeze; whilst, south of the equator, we found the climate in every respect more pleasant than in any locality on the coast north of it.

Though I regard the picture of Liberia's prosperity as having been too highly coloured in the United States, I do not regard the colony as destined either to go back, or to stand still. It receives annually 150 or 200 emigrants, with whatever of civilization and industry the race may have acquired amongst us; whilst the charities of our citizens, and the fostering care of the Colonization Society, are constantly contributing to its support.

From 70 to 80 vessels annually touch at Monrovia, and other Liberian ports, for camwood and palm oil chiefly; whilst sugar and coffee of excellent quality are susceptible, with capital, of being made staples of the country, and its commerce, with that of the entire coast, is yearly increasing. Commercial intercourse with Europe and America is daily imparting, not only to Liberia, but to the entire coast of Africa, a portion of their civilization; whilst missionary benevolence is, at this moment, conferring upon thirty thousand African children "the benefits of knowledge and the blessings of religion."

Progress, though slow, has thus far been steady under the combined influence of man's cupidity and his benevolence; and, under these two agencies, it will continue to advance, till the African, everywhere within their reach, shall attain a considerable degree of Christian civilization.

Liberia contains a population conjecturally estimated at 75,000 natives, and 10,000 emigrants from the United States, fifteen hundred of which latter class constitute, with a few missionary families, the city of Monrovia.

We left Monrovia on the 2d of December, after a stay of four days, and, coasting slowly along on a line of fifteen fathoms' sounding, and at six or eight miles from the shore, through light breezes, variables, and calms, with the atmosphere heavy, sultry, and oppressive, the thermometer at 78° to 82° at 8 A. M., the nights damp with dew, and with heavy clouds gathering over the coast at evening, and expending themselves, without wind, in heavy thunder showers before reaching the ship, we anchored at Cape Palmas, at the distance of 300 miles, on the 8th of December.

This coast, called, or miscalled, the Grain Coast, perhaps from the rice and millet which, with cassada, yams, sweet potatoes and groundnuts, constitute its chief vegetable products, and the chief food of its inhabitants, stretches to the southward and eastward in a straight line, with but few and slight indentations and projections, and presented to us, day after day, the dull, unvaried uniformity of a low, surf-beaten coast, with trees and brushwood growing to the water's edge, and projecting their verdurous tops above the horizon when the low beach became invisible; whilst, at many miles' distance from the coast, the land, at intervals, rose to an elevation of ten or twelve hundred feet.

This extended plain, rank with luxuriant vegetation, and deluged by periodical rains, must necessarily, under the heat of a vertical sun, teem, on the subsidence of the rains, with noxious miasmata; and, accordingly, we are told that the settlements along its margin are annually visited, during that stagnant and sultry season, by fevers.

The town of Cape Palmas, planted on the promontory, resembles Monrovia in situation and hygienic character, and is interesting to an American chiefly as one of the four missionary stations of the Maryland colony (of which Rocktown, Fishtown, and Cavalla are the three others, all within the compass of 20 miles), and where not only emigrant, but African children are receiving Christian education. The colony numbers, besides the natives, about a thousand emigrants.

Leaving Cape Palmas on the day after our arrival, we passed the Ivory Coast, and, on the 16th of December, anchored at Elmina on the Gold Coast, at the distance of 387 miles, and in lat. 5° 5′ N., and long. 1° 23′ W.

The southerly and southwesterly trades, which we struck after leaving Cape Palmas, sweep gently up the entire Gulf of Guinea, and confer upon the coast a climate in every respect more agreeable than that which we had just left.

Elmina, the principal Dutch station on the coast, consisting of a native town of stone and mud, with thatched roofs, and containing ten thousand inhabitants, is remarkable for its conspicuous white castle—the largest on the coast, and built by the Portuguese, for the traffic in gold dust and palm

oil—and, in a hygienic point of view, for the two classes of disease there endemic, viz., dysentery and the Guinea worm. Whilst it was represented to me, by the surgeon of the castle, to enjoy a nearly total exemption from fever, so destructive to the health of the unacclimated on the coast of Liberia, the exhalations from a marshy creek at the edge of the town exposed it to annual autumnal visitations of dysentery, which, though especially fatal to the Dutch officers and other Europeans who led irregular lives, did not wholly spare the natives. The natives, of both sexes, and particularly the women, who appeared especially to abound in the shaded streets of Elmina, were a well-formed and well-developed race.

But especially was I interested by the opportunity here presented of seeing specimens of those fortuitous and temporary inmates of the human body, peculiar to some warm climates, and which are popularly known by the name of Guinea worms.

The surgeon of the castle, who had always many cases of it on hand, showed me samples of this filiform parasite (the *filaria medinensis* of nosologists) in various stages of its progress, from the earliest perceptible irritation beneath the skin in a single point, to fluctuation and approaching ulceration at that point, with a distinctly felt development of the worm in its waving or serpentine direction in the subcutaneous cellular tissue, and finally to its semi-extraction at the ulcerated point. Its length he stated to average eighteen inches, but to range from one foot to three. These worms he represented to exist sometimes singly, sometimes in succession, and sometimes in numbers at a time in different stages of development in the same individual, and sometimes to appear a long time after leaving the coast of Guinea. Though they usually infest the lower extremities, I saw one, of eighteen inches, half extracted from the side of an individual who had two in the lower limbs. The extracted part looked and felt like a string of catgut; whilst the other could be distinctly traced by the fingers, like a whipcord, beneath the skin. The sinuous tract in which the worm was lodged was sensitive on pressure, particularly at its orifice; and traction caused some degree of pain. On this account, as well as to avoid the risks of a rupture of the worm, the traction is not carried beyond a quarter, or at most, a half of an inch at a time, and is renewed daily, or twice a day, until its complete extraction. The protruded portion dangled at the side; though it is usually recommended, as well to protect it from injury as to prevent retraction, to coil it around a quill of cotton, or other cylindrical substance, and to secure it near the aperture by adhesive plaster or other retentive means.

The Guinea worm, as I was assured, requires two or three months to run its course, during which time the patient, though partially disabled, may walk freely about. Whilst it lasts, the soldier at the castle is relieved from duty. An attack secures no exemption for the future, but may be followed by a series of invasions.

It has been observed that the officers, and others who are properly clad, are nearly, if not entirely exempt from Guinea worm, which attacks, in great numbers, the natives, whose limbs are exposed with little or no clothing, and who bathe in the stagnant waters near the town. May we not, then, refer the origin of these subcutaneous worms to the penetration (after the reputed manner of the pulex penetrans or Chigoe) of the animalcules, from the waters, in which they may be supposed to abound, through the skin into the cellular tissue, where, finding a nidus adapted to their nourishment and growth, they attain, at length, a development and activity which lead, through the irritation and inflammation which they create, to their expulsion from their human habitation as no longer to be tolerated inmates?

The opinion that they are due to the drinking of water charged with the entozoal germs, which, traversing the absorbents and the route of the circulation, come to be deposited beneath the skin, there to find a home, and to receive their development, is destitute of the support of physiology and analogy; though it does not want advocates, among whom is the surgeon of the castle at Elmina.

The idea of their spontaneous generation will hardly be maintained in these latter days.

After a stay of two days at Elmina, we proceeded, on the 18th of December, to Cape Coast, whose large white castle, built, like that of Elmina, on a projecting, surf-beaten rock, each at the extremity of an incurvation of the coast of seven miles in sweep, and each the structure of the Portuguese two centuries ago, was conspicuously visible by day, as the red light of its light-house was at night, from our anchorage at Elmina.

As this latter is the seat of the lieutenant governor of all the Dutch settlements on the coast, so is Cape Coast that of the governor of all the British stations, six in number, on the Gold Coast. The town, in the immediate rear of the castle, is constituted of small, thatch-roofed mud houses, tenanting seven or eight thousand well-developed natives, with a dozen white European-looking residences of merchants.

For a locality but five degrees from the equator, Cape Coast enjoys a happy degree of exemption from fever, dysentery, and, indeed, every malignant disease; though, in common with the rest of the Guinea coast, the natives are troubled with the dracunculus, or Guinea worm. Such is its healthfulness that the Rev. Mr. Freeman, who had been residing there as a Wesleyan missionary from England since 1837, pronounced it the healthiest station on the coast from Sierra Leone to the line, and that it would compare favourably in this respect even with Sierra Leone.

This happy exemption it doubtless owes in part to the refreshing southwest trades that perpetually sweep the coast of Guinea, and everywhere blow home, but chiefly to the absence of low and marshy soil, and of sluggish creeks or rivers, in its neighbourhood, and also to the range of high

hills immediately in the rear, and to the elevated and rolling country beyond them.

The trade here, as elsewhere on the gold coast, is chiefly in palm oil, selling formerly at 33 cents a gallon, and now at 43, and worth in the United States 75 cents. The export of this is yearly increasing, so much so that thirty to forty vessels trade on this coast from New York, Boston, and Salem, and a much larger number from England, carrying away, in addition to the palm oil, a little gold dust and ivory, which Americans pay for in rum and tobacco, and the English in cotton goods, muskets, and powder.

The palm-tree is not yet cultivated, but is native. Yearly increasing as is the demand for palm oil, it will doubtless in time be cultivated, and become the great staple of Western Africa.

The extent of our intercourse, as thus stated, with the coast of Africa, exhibits the importance to us of whatever relates to its degree of healthfulness and to its medical topography. The character of the trade shows something of the industrial condition of the people; whilst their intellectual and moral state, present and prospective, may be partly inferred from the existence, along an extent of 350 miles on this part of the coast, of 38 missionary stations, at one of which alone, that at Cape Coast, I witnessed 200 native children of the Fantee tribe receiving the blessings of a Christian education.

We left Cape Coast, after a stay of three days, on the 21st of December, and anchored, the next day, at Accra, at the distance of 70 miles, in 5° 32′ N. latitude, and 14 miles west of the meridian of Greenwich.

The gold coast had, in its entire extent thus far, been moderately high, in contrast with the low flat line of shore that had preceded it, and everywhere verdurous and woody, with hills, at intervals, far in the interior, of ten, twelve, or fifteen hundred feet in elevation.

The English and Dutch have each a castle or fortress, within a quarter of a mile of each other, at Accra; whilst a mile to the eastward is a third castle, Christianborg, which, with three others on the coast, was purchased, in 1850, from Denmark by the English.

The site of Accra, as viewed from the ship, is the prettiest we have seen on the coast since leaving Sierra Leone. The town is on a double slope, and consists of mud houses, with 5000 natives, and a few neat residences of merchants. It is reputed to be a healthful locality.

We were off the next morning for Quitta, 80 miles to the eastward, in lat. 5° 55′ N., and long. 1° 14′ E., the Ultima Thule of this our second voyage. The coast from Accra was low, with occasional clumps of cocoa and other trees, and a salt water lagoon stretching just back of it along its entire length from Accra eastward beyond Quitta. The latter is a small town of mud houses, with 2000 people, in a cocoanut grove near the beach;

and the small fort a mile to the east of it is one of the four purchased, seven years since, by England from the Danes.

We left Quitta, after a few hours' stay, on the 24th of December, to return to Monrovia, and thence to Porto Praya.

The same pleasant southerly and southwesterly trade-breezes that had fanned us steadily four, five, and six knots an hour up the Gulf of Guinea now fanned us as steadily back to the region of variables and calms, which we entered abruptly on the morning of the 1st of January, in about 7 degrees west longitude. We had thenceforward almost constant harmattan weather up to Monrovia, as well as during our eight days' stay there, and for several days afterwards on the way to Porto Praya.

During the prevalence of the harmattan, the wind was from the northward and eastward off the coast, generally cool and excessively dry, filling the atmosphere with a haze, or dust fog. The air was then oppressive, producing a heated feeling generally, dryness of the eyes, restlessness, and an uncomfortable sense of fulness of the head, with great indisposition to bodily and mental labor, and dulness of memory.

With scarcely a shower during a month since our coming to the station, these intertropical skies, though rarely very clouded, have been rarely very clear. The sun has shone with little of the splendor, and the stars with little of the twinkling brilliancy which they exhibit in a northern sky. A soft, vapory haze drawn up from the ocean, or a dusty mist brought by the harmattan winds from the deserts of Africa, has curtained out their excess of brightness. The sun has rarely gone down clear; and the stars have risen and set behind the dusky circle that rested, for several degrees, upon the horizon.

The cholera, which prevailed in the three windward of the Cape Verd Islands in August and September, carrying off ten or twelve thousand of the inhabitants, disappeared entirely by the middle of October; and, in the early part of November, they were declared in free communication with the rest of the group. Subsequently, however, it appeared in the island of St. Jago; three hundred fell victims to it. The last case occurred on the 11th of January; and on the 6th of February, this island also was declared free, and the whole group pronounced to be in health.

For three or four years, including the present, the crops of the Cape Verd Islands have been scanty, from insufficiency of rain, and many of the inhabitants have been reduced to much suffering.

The weather here (Porto Praya) since our return from the coast, on the 25th of January, has been cool and dry; the thermometer at 8 A. M. standing at 68°, with a very fresh northeast trade day and night. * *

I have ventured to submit the foregoing remarks on the medical topography of that part of the coast of Africa which the present cruise has presented to my observation. They are necessarily cursory and imperfect, and therefore liable to error; cursory from the shortness of our stay at

each locality, and imperfect from the fact that the coast offers few statistics, and little information that is full, accurate, and reliable. Climate and locality, their relation to health and disease, and their influence on the physical moral, and intellectual condition of man, are not there studied, or made matters of science. No meteorological registers are kept of the conditions of the atmosphere; and little investigation is made of the sanitary state of the country, of the hygienic condition of the inhabitants, of the character and degree of their diseases, and of their causes, their prevention, and their cure. All these important subjects that affect the habitability of a country, and, in a great degree, the well-being of its people, are matters, at best, of but individual opinion, the most fallible and unsatisfactory of all kinds of knowledge, if, indeed, it be worthy of the name.

To pronounce a climate agreeable or disagreeable, hot or cold, wet or dry, sickly or healthy, debilitating or invigorating, is to give little information, unless we know the mind of the informer, or the standard of his estimate. Without this, his opinion hardly enters into the domain of knowledge.

Nothing short of patient observation and investigation, with all the aids of science and of instruments, and of carefully prepared statistics, in relation to locality and climate, and to their influence on health, can furnish reliable information; for, although man claims to combine, in his own person, the thermometer, barometer, hygrometer, eudyometer, anemometer, and a complete register of health and sickness, the misfortune is that no two of these human standards exactly agree.

Failing, as does the coast of Africa, in all these essentials to knowledge, the subject of hygiene, as resulting from climate, locality, soil, and its productions, is here, like most other subjects, a matter, not of science, but of vague, conflicting, individual opinion and conjecture, from which, at best, but approximative inferences can be drawn.

It is these alone that I have ventured, in this communication, to offer on a portion of our cruising ground, hoping that, under the circumstances, they may not be unacceptable to the Bureau.

I would beg, in concluding this subject, to invite the attention of the Bureau to two points—one, the relative healthfulness of this station; the other, that of the north and south coast.

The health of the *squadron*, which compares favourably with that of squadrons elsewhere, is exhibited in the quarterly reports of sickness and mortality; but not the healthfulness of the *station*.

The chief sources of disease on any station we are happily nearly exempted from; I mean boat duty, and liberty to the men. The men go ashore at Madeira and Teneriffe, and rarely elsewhere. Hence comparatively little sickness results from shore-going on this station. Boat duty, watering, wooding, and provisioning ship, on all stations a fertile source of mortality, would, on this station, be frightfully so, were it not all performed

by the Kroomen, of whom each ship has a complement; this ship having twenty-nine, and who, from acclimation, are rarely sickened by it. When last at Monrovia, we watered ship from six miles up the river. The boats went up the river by night as well as by day, with perfect impunity to the Kroomen.

This would have been impossible to our seamen. It would have strewn the decks with sick and dying. And, even if performed by our sailors, only in the daytime, under a torrid sun, and in three times the number of days, the sickness would have been great, to say nothing of the mortality.

A report is on the files of the Bureau of the fearful results of a night on shore, as exemplified, ten years since, in the case of the crew of the frigate "United States" at this place; in consequence of which, many sickened, many died, and many were sent home. Our great aim here is necessarily to keep well; and the health we enjoy results from the pains we are at to resist the unhealthfulness of the station. We purchase health by precautions, privations, and restrictions.

I have said that the south coast is, in similar parallels, cooler, and, I have no doubt, healthier than the north.

Although the entire coast forms a lee and a safe anchorage throughout the year, there is no harbour through a sweep of twenty-six hundred miles from Sierra Leone, south to St. Paul de Loando in lat. 8° 48′ S., long. 13° 13′ E.

The town of Loando has a population of 1500 whites, chiefly Portuguese, and 8000 or 10,000 blacks, one-half, or more, of whom are slaves. It is in a comparatively cool and healthy locality, with an abundant market, excellent water, and an admirable harbour. These designate it as the proper place, and the only place on the station, for our depot, in case it should ever be removed from Porto Praya. It would there still be within reach of the mail, as the monthly mail steamer from England touches along the coast as far as the island of Fernando Po.

After a short rendezvous at Porto Praya, the squadron separated; the "St. Louis" for Cape Palmas on the 7th of February, the "Jamestown" for Bathurst on the 14th, and the "Dolphin" for a cruise on the coast three days afterwards.

In consequence of the freshness of the N. E. trades at this season, our run over to Bathurst, 400 miles from Porto Praya, was rough and disagreeable. We entered the Gambia on the 17th, and anchored a quarter of a mile from the town, which is in lat. 13° 30′ N., long 16° 41′ W. This important British settlement, of about forty years' date, stands on a low, flat, sandy islet, of four miles by one in extent, half overflowed at high tide, and six miles up the river, which, from ten miles wide at its mouth, there contracts to two miles, widening, however, to seven miles immediately above. It has a population of 4000 or 5000 negroes, with less than a hundred whites, chiefly English, and maintains a commerce with France,

England, and the United States, in groundnuts principally (of which the annual export is a million and a quarter of bushels), and some beeswax and ivory.

We were agreeably surprised by the neat, pretty, and inviting appearance of Bathurst. It is the best built town on the coast, more so than St. Paul de Loando, Monrovia, and Freetown at Sierra Leone, which three alone can compare with it. It consists of substantial, European-looking houses of stone and brick, many of them handsome and costly. The native huts are of cane, and are neat.

The marshes behind the town cause intermittent and remittent fevers in the autumn after the rains. They, as I was assured by the medical officers of the garrison, are limited to this season, rarely malignant, and generally readily curable by sulphate of quinia. During the rest of the year, the place is reputed healthy, and the weather in the winter cool and delightful.

The Gambia is navigable by large vessels, at least to Macarthy's Island, some 200 miles above Bathurst, and where also the English still maintain a garrison, thus exclusively commanding the trade of this valuable river.

Bathurst is indifferently supplied with wood, water, and provisions.

After a three days' stay, we were off on the 21st of February for Gorée, 90 miles up the coast, in lat. 14° 39′ 55″ N., long. 17° 24′ 40″ W., and, on the 23d, communicated with the place without anchoring. It is, after St. Louis on the Senegal, the chief French station on the coast, and the depot of their naval squadron. We found there a number of merchantmen, implying that it has a trade.

Gorée occupies a volcanic, rocky island, half a mile by a quarter in size, rising to 100 feet at its southern end, on which is planted a fortress to mount, when completed, 80 guns; whilst another of less size defends the northern extremity. It is in a large bay that sweeps round from Cape Manuel to Cape Naze, two miles and a half to the east of the former, and two miles south of the line of the coast, which defends it from the prevailing winds, and affords a secure anchorage during eight months of the year.

The town is of stone and brick, plastered, and pretty well built. It contains 4000 or 5000 blacks, of whom none are slaves, with a number of Europeans, mostly French.

Gorée has nothing of itself, not even water, which, of bad quality, and in insufficient quantity, is, with a scanty supply of provisions, obtained from the neighbouring coast. It has nominally a rainy season in July, August, and September, marked, as I was assured on the spot, by an occasional shower of a few hours during those months. The climate was represented to me as delightful throughout the year, and as entirely exempt from sickness. Indeed, as I saw myself, there was nothing to create sickness.

From Gorée, we filled away for Porto Grande, in the island of St. Vincent (Cape Verds), which we reached on the morning of the 26th, and from

which, after receiving our mail, we proceeded, the next afternoon, to Porto Praya, where, at the distance of 150 miles, we anchored on the evening of the 28th (yesterday), after an absence of two weeks.

I should here remark, what would have been appropriately stated on a preceding page, as illustrative of the unhealthfulness of the station, and of what, but for the present sanitary precautions, would doubtless continue to be the sickliness of the squadron, that, in the little cemetery at Porto Grande, inclosed by Commodore Perry, are the graves of two officers, and twelve sailors of the "Preble," who died at that place in December, 1844, and January, 1845, of African fever contracted in the river Jeba. How many more of the ill-fated ship's company fell victims to the same endemic the records of the Bureau will probably attest.

Whilst Porto Praya shall remain the head-quarters of the squadron, and the depot of the stores, Madeira and the Canary Islands must continue the retreat of the vessels from the rainy and sickly season of the coast. They are the only localities on the station, north of the Line, at which the ships' companies, debilitated by a lengthened cruise on the coast, can recover the tone and vigour to fit them to repeat it without risk to health. Porto Praya even, though comfortably cool and healthful in winter, is, in summer, oppressively hot; and to a ship's company that should then, and in the autumn, remain on shore at night, it would be little less fatally sickly than the coast.

It is, therefore, in no degree adapted as a resort at which to recruit a crew in the interval between two coast cruises. At that period, the season of rains and sickliness on the coast north of the line, Madeira and the Canary Islands are necessarily the retreats of our men-of-war; at which alone the climate is measurably invigorating, and the crews can have a run on shore.

Madeira owes to the equability of its temperature, and to the softness and purity of its atmosphere, the felicity of climate which has long caused it to be the resort of consumptives from Northern Europe, who, to the number of three or four hundred, flock thither yearly, from October to May, to cheat their own rude winters, and to gain a relief from their sufferings. Its southern slope is sheltered from the prevailing winds by the range of mountains that rise to four, five, and six thousand feet; and it enjoys (at Funchal) a medium temperature of 68° Fahr., with a daily range of from two to four degrees, and an annual range stated as rarely exceeding fourteen.

Although Madeira has its winter, the least pleasant season of the year, when the mountains are covered with snow, often overhung by heavy clouds, and sometimes deluged with rains, yet its southern slope, near the sea, is represented as even then a garden, usually smiling beneath sunny skies with the balmy softness of spring, its luxuriant verdure, and its genial atmosphere.

In the heats of summer, if heats they can be called, some of the citizens of Funchal retire to the cool table-lands, or serras, two or three thousand feet above the sea.

The climate of Funchal I have heard objected to as damp; and the hygrometer is said to have, in some localities, confirmed the objection. Though some of the nights were certainly not without dew, and the atmosphere at times was softened by a vapoury haze, yet, from what I saw myself, and heard from residents, dampness cannot be a characteristic of the climate, nor exist in such a degree as to impair its general healthfulness, or its suitability for consumptive invalids, of whom, despite the caprices of fancy, and the increasing number of resorts, it still continues, in as great a degree as ever, the favourite retreat.

The islanders are simple, civil, harmless, and industrious; and they are poor, less from indolence than from want of employment, and from an overpopulation, exceeding, by one-third, the products of the island to support. The failure of the vine for the last six years is a misfortune, less to the islanders generally than to the wine-growers in particular; the sales of the wines rather enriching the few than contributing to the support of the many. A culture that shall more equally diffuse the products of the soil, will advance the prosperity of the island, and the well-being of its inhabitants.

When we reached Madeira in the middle of May (1856), diarrhœa and dysentery, usual at that season, were prevailing in an unusual degree. These proved but the forerunners of cholera, a disease till then unknown in Madeira. The first case of cholera was admitted into the hospital at Funchal on the 8th July. By the 21st, about forty deaths had occurred from the disease in the city hospital. The mortality daily increased till, on the 31st July, it reached its maximum, one hundred and sixty-seven, in Funchal alone, a city whose population is variously stated at from twenty to thirty thousand. It thenceforward declined, after having numbered about two thousand victims in the town, and in the island (which contains the large population of from one hundred and twenty to one hundred and thirty thousand) about six thousand. The amount of destitution and wretchedness in Madeira, where, overstocked as it is with population, there are always thousands on the verge of starvation, offered a rich harvest for a pestilence like cholera; and accordingly it did its work of death effectually.

Of the Canary Islands, our experience has been confined to Teneriffe and Palmas, in the Island of Grand Canary, both remarkable for healthfulness and loveliness of climate, and at which a ship's company incurs no risk of sickness from remaining on shore at night. The anchorage at Palmas is exposed, and at times unsafe. At Santa Cruz, in Teneriffe, it is sheltered from the northeast trades by the island itself; though, being an

open roadstead, it is, like that at Funchal, exposed to occasional gales, during the autumn and winter, from the opposite quarter.

We found Santa Cruz warm in August and September, the thermometer on the gun deck standing, at 8 A. M., at 72° to 74° during our six weeks' stay. It is shut out from the refreshing northeast trade-breezes that perpetually fan the island, by the hills that inclose it in the rear. Immediately behind these, the table-land, twelve hundred feet in height, extends entirely across the island to Oratava on the northern side, and is a most picturesque and beautiful plain, cool, refreshing, invigorating, and blessed by as lovely a climate as the sun shines on; a delightful retreat for the seeker after health.

Teneriffe, with its volcanic soil, is rich, but only partially cultivated. It is dry from a sad deficiency of trees. The death of the vine, contemporaneously with that at Madeira, has been amply compensated by the successful culture of the cochineal, and is not regretted.

These fortunate islands, lying in the sweep of the northeast trades, enjoy perpetually an equable and delightful climate. As at Madeira, the annual range of the thermometer is very small. There is no sickly season, and health reigns throughout the year.

The selection of Porto Praya as the head-quarters of the squadron confers on the Cape Verd Islands an importance to us they could not otherwise possess. This archipelago of a dozen islands and two islets, disposed in a northern and a southern group, is comprised within the parallels of 14° 48′, and 17° 12′ N. lat., and the meridians of 22° 42′ 34″, and 25° 23′ 10″ W. long., and lies over against Cape Verd, the westernmost projection of Africa, at the distance of four hundred miles, a cape from which it derives a name to which its striking destitution of verdure would otherwise little entitle it. It is little else than a cluster of volcanic mountains jutting from the ocean, dark, rugged, confused, broken by deep ravines, extensive valleys, and table-lands, with peaks of four, six, and eight thousand feet in height, of which that of Fogo is occasionally active, and projects nine thousand one hundred and fifty-four feet above the water, an altitude short of that of Teneriffe by only three thousand and eighteen feet.

The shores of the islands, which are everywhere clean, bold, and abrupt, are often steep, rocky, stratified cliffs, with a very narrow line of soundings around them, proving the great depth of their bases below the surface of the water.

They are remarkable for the fewness of their harbours, which nature has partially compensated for by constituting the entire southwestern coasts, in all their indentations, a sheltered anchorage during nine months in the year.

The Cape Verd Islands lie in the sweep of the northeast trades, which in the spring are particularly fresh, and which are rarely interrupted, except

in July, August, and September, when occasional southwest gales, with heavy rains, beat on that side of the islands, driving heavy seas upon the coast, and obliging ships to put to sea. The only sheltered harbour in the group, throughout the year, is Porto Grande, in the Island of St. Vincent. It is a capacious bay, capable of harbouring a large fleet, and is protected from the winds by the high hills that surround it, and from the sea, at its entrance, by the opposite Island of St. Antonio. The great want, however, of resources of the Island of St. Vincent, almost entirely destitute as it is of animal and vegetable products and of water, is a bar to its becoming the head-quarters of the squadron, aside from the disadvantage of its being two days' sail farther from the coast than Porto Praya.

Porto Praya ranks second as a harbour, though first in all other respects. It is a fine bay, over a mile in depth, and a mile and a half across the entrance, which opens to the southward, and exposes it to the gales from that quarter in July, August, and September, though sheltered at all other times from the prevailing northeast winds, with anchorage for a dozen ships of the line. Though the weather-shore of the harbour consists of high, perpendicular cliffs, its situation at only six miles to the southwest of the low southeastern point of the island exposes it, in a much greater degree than if it had been still farther to the west, to the freshness of the northeast trades, and to the reflux swell of the sea. A surf-beaten sand beach at the head of the bay is the place of landing, which we effect on the backs of Kroomen.

The town of Praya, the present capital of the archipelago, and the present residence of the Governor-General, occupies a table-land of rock at the head of the bay, half a mile by a quarter in extent, one hundred and fifty feet above the sea, with cliffs nearly perpendicular, and surrounded, except at the southern extremity, which is washed by the sea, by a deep valley, which, during the rains, is filled with water, and, after their subsidence in October, sends up the miasmata which cause the annual endemic fevers. It contains some three or four thousand persons, chiefly negroes of mixed blood, and a few Portuguese. Except in the long seasons of drought, which from time to time visit these islands, the supply of every produce which an inexhaustibly rich volcanic soil can yield, is abundant. The fertile valleys and table-lands would, with sufficient rains and proper cultivation, fully satisfy the wants of the islanders, who number, as conjecturally estimated, from one hundred to one hundred and twenty thousand. The various intertropical fruits, especially the orange, of unsurpassed excellence, vegetables, poultry, meats, are there yielded in abundance, in addition to the fine fish that frequent the shores of all these islands, as they do those of the Canary and Madeira archipelagoes. For the last six years, including the present, there has been little rain, a phenomenon of occasional occurrence, and of difficult explanation in view of the fact that the periodical rains never fail on the coast of Senegambia in similar parallels. The

islands, nearly stripped of trees, and with little verdure now even in their rich and extensive valleys and plateaus, look burnt up, dreary, and desolate, yielding but a scanty supply of even their spontaneous productions. Of consequence, there is little to export. The Orchilla weed, valuable for its dye, once a staple and a source of revenue, has ceased to be collected; and the chief, if not sole, exports at present are goat-skins, pulga-nuts which yield a valuable oil, and salt, which is largely prepared on three or four of the islands. Water itself is now scarce, even on this the largest island of the group, and the best provided in nearly every respect. A reservoir on the beach, at the head of Porto Praya, supplies our squadron, and, though low at times, has thus far, I believe, never entirely failed. Its water is at present not very good.

Porto Praya, it would thus appear, is in few respects fitted to be the head-quarters of the squadron. The supply of provisions and of water is rarely sufficient; and wood is scarce. During the winter, the weather is dry and agreeably cool, and would be pleasant but for the fatiguing freshness of the perpetual N. E. trades, and the unceasing reflux roll of the ocean which they send in. For eight months in the year, it may be visited with little risk from southerly gales, and with little inconvenience from rains and sickliness. During the remaining four months of July, August, September, and October, it would be desirable to avoid it, and to be south of the Line, or at the windward archipelagoes of Madeira and the Canaries.

The only other place on the station that could be thought of as a depot is the Portuguese establishment of St. Paul de Loando in 8° 48′ south lat. It has, as I have stated, a population of 8000 or 10,000 blacks, and 1500 whites, and is well supplied with wood, provisions, and water. It is little incommoded by the diluvial rains that, for three, four, or five months, vex the entire northern coast from the Line to the 12th or 15th degree. It is reputed not to be sickly, with a climate at no time oppressively hot, and for the most part agreeable. A few degrees south of it, the locality of Elephant's Bay, in lat. 13° 14′, and of Little Fish Bay, in lat. 15° 13′, are visited by the vessels of our squadrons, and are represented by them to be healthful and invigorating, to be beyond the limits of the African fever, and that there crews may recruit their health and strength, and recreate by a run on shore. These are the advantages which Loanda possesses over Porto Praya as a depot for the squadron; aside from the fact that it is immediately on our cruising ground. The establishment of Porto Praya as the rendezvous creates the necessity to resort to the Canaries and Madeira during the summer to recruit strength after a cruise down the coast, a necessity which would not exist to the same degree were the depot at Loando.

The islands are of little commercial importance to us, and constitute but a small part, if any, of the object for maintaining a force on the station,

which is, therefore, made to include them, scarcely more than incidentally, and chiefly as a depot, and as a recruiting ground. On each of these accounts, they must necessarily be resorted to; and, from their remoteness from even the northern limit of the cruising ground, which rarely extends beyond Monrovia, this necessary resort to them is always attended by a lengthened withdrawal of the ships from the station proper. From the want of steamers, the only kind of vessels of much efficiency in these regions of light breezes, variables, and calms, even a single month's recruiting at Madeira or the Canaries, conjoined with the necessary resort to the Cape Verds for provisions in the passage each way, entails a withdrawal of the sailing ship, from her cruising ground, for a third of the year. These islands are not embraced in the British station, though more extended, coastwise, than our own; and they are rarely touched at by any of the vessels of the British squadron, except in their passage to and from England; although eighteen of them, out of the twenty-one on the station, are steamers. Our little squadron, therefore, works to disadvantage, both from the want of steamers, and from the distance from the cruising ground of both the provisioning and recruiting stations, a disadvantage which would be much diminished by changing the head-quarters of the squadron from Porto Praya to St. Paul de Loando, to say nothing of the benefit likely to result therefrom to the health of the squadron.

The climate of the station necessarily varies with latitude, with elevation and other topographical circumstances, and, in an especial degree, with position in or out of the perennial winds. Insular climates, moreover, are, for well understood reasons, more equable than continental. The islands of this station, in particular, enjoy a more uniform climate than the coast, not only for reasons common to all islands at a distance from the main, but also from their lying in trade-winds, which give them a trade-wind climate, exempt from the frequent storms and other atmospheric disturbances that harass the zone of calms and variable winds, which stretches along the coast, and runs with the equator between the N. E. and S. E. trades. They are exempt, besides, from the tornadoes, of which every cruiser on the coast hears so much. The south coast also feels little of these hurricanes, which are there rare, and do not exceed the violence of an ordinary storm. As we advance north from the Line, they are felt along the whole coast of Guinea, occasionally, but not in their greatest violence. It is on that part of the coast which extends from Cape Palmas to Cape Verga, between the 4th and 10th parallels that they occur most frequently, and in full force. These fearful storms rise over the land at the N. E. with frequent lightning. They thence move to the E., and at the S. E. are in full blast, when, or soon after which, they discharge themselves in torrents of rain, and, after an hour or two's duration, die away in the south and southwest. The tornadoes, as I have said, usher in and terminate the rainy season, which, moving with the sun, commences after it has passed the zenith of a

place in its travel north, and ends after it has again passed it on the return to the equator. At those vernal and autumnal periods, or nodes between the rainy season and the dry, before the diluvial rains have fully set in and flooded the soil, and after their termination, when it is still reeking under a torrid sun, the stagnant atmosphere is loaded with moisture freighted with miasmata, the source of the endemic fever. Then it is that Providence kindly sends the tornadoes that sweep the malaria from off the face of the land. They always blow seaward, the entire coast constituting a lee.

Nor are the islands, equally with the coast, exposed to the influence of the harmattans. These sirocco winds, that are felt at times on all the northern coast, blow over the Sahara Desert, giving to it all their moisture, and receiving a portion of its impalpable sand. Their direction is easterly and northeasterly. They fill the atmosphere with a dry haze, or dust fog, which is densest on the coast of Senegambia nearest to the desert, and rarest on the Guinea coast, from the loss of part of the dust in the vast intermediate region over which they have blown. They usually commence in December, soon after the dry season has set in, and occur, at intervals, and of a few days' duration, through January and February. They are remarkable for their parching dryness, and for the general feeling of malaise they occasion, though not otherwise noxious to health. They extend at times to Madeira, where they are known under the name of "l' esté," or the east wind, of which the consumptive invalid is said to complain less than persons in health; and they have been known even to be accompanied by a flight of locusts, which has covered the island and all the surrounding sea. In November last, off the isles of Los, the "Jamestown's" decks were strewed with grasshoppers brought by a harmattan. I have felt these African winds at Porto Praya, which is four hundred miles from the coast; though they usually extend but a few leagues.

In regard to the dust fogs, said to occur in the spring and autumn in the region of the Cape Verds, we have seen but one; though the atmosphere is there often filled with a dry, dusty haze. The red-dust fog that we saw, we passed through on our return from St. Paul de Loanda to Porto Praya in February, 1856. It was in the belt of equatorial calms, which we entered from the southeast trades on the 1st of February, in 2° N. lat., and between 12° and 13° W. long. We were immersed in the dust fog six days, entering it abruptly on the night of the 9th of February, in lat. 7° 30′ N., and long. 15° W., and emerging from it, and at the same time from the zone of equatorial calms, into the N. E. trades, on the 15th, in lat. 9° N., and long. 19° W. With these, we beat to Porto Praya, in lat. 14 54′ N., and long. 23° 30′ W., crossing a southwest current of nearly a mile an hour, arriving on the 22d of February. The red dust settled thickly on the sails, rigging, spars, and decks, from which it was easily collected. It was an impalpable powder, of a brick-dust or cinnamon

colour. The atmosphere was so dusky that we could not have seen a ship, at mid-day, beyond a quarter of a mile.

The nature and source of these red-dust fogs are matters of speculation; whether they are of the animal, the vegetable, or the mineral kingdom; and whether they are wafted from the plains of Africa by the N. E. trades, or transported from those of South America by the return atmospheric currents in the upper strata, against the direction of the surface trades, and precipitated in the belt of calms. This curious subject is ingeniously speculated on by Mr. Maury in his valuable "Sailing Directions," his reasons inclining to the organic nature, and the South American origin of the dust fogs.

We experience great difficulty in sending home the invalids. We have some who have been waiting an opportunity for six months, and others for a shorter time. A vessel from Madeira or the Canaries to the United States is of rare occurrence; and only occasionally there chances to be one from the Cape Verds.

We have completed our cruising on the station, and now only await the day of our departure for home. It affords me pleasure to assure you of the continued excellent health and efficiency of the squadron. Not only has no malignant disease occurred among any of the ships' companies, but the sick lists have been composed of ordinary diseases, not peculiar to the station, moderate in degree, and of little variety. This continued health, and entire exemption from the fatal endemic diseases of the coast, and of the Cape Verd Islands, are, I may here repeat, doubtless due to the strict observance of the wise sanitary regulations of the department, enjoining, as they do, the avoidance of unnecessary exposure to the sun, and of the shore after sunset; to the employment of Kroomen in watering, wooding, and provisioning ship, and in all other boat duty; to cleanliness, ventilation, and dryness of the ship in all its parts, especially excluding water from the hold, and avoiding all unnecessary wetting of the decks; to the absolute exclusion of bad fruits and water, and the unrestricted use of good; and, in a word, to the care constantly exercised to secure, by every possible means, the ships' companies from exposure to the causes of sickness, and to preserve them in a state of health—a result which, on this station, has not failed to be obtained in the exact degree in which the well understood means of securing it have been observed, while the neglect of any of these measures is sure to entail sickness and death.

I am, very respectfully, your obedient servant,

GEORGE CLYMER,
Surgeon of the Fleet.

WM. WHELAN, M. D.,
Chief of the Bureau of Medicine and Surgery,
Navy Department, Washington, D. C.

ART. VII.—*Two Cases of "Throat Deafness," with some Observations on the same, and a New Method of Application for its Relief.* By FREDERIC D. LENTE, M. D., of Cold Spring, N. Y.

CASE I. Miss Emma O., aged 18, a teacher in one of the "ward schools" of the city of New York, applied to me, June 26th, 1859, complaining of deafness, which has been gradually increasing for some months, until it has almost incapacitated her from pursuing her occupation. She states that, for some weeks past, while chewing at her meals, the deafness is complete, so that although she sees that a person at table is addressing her, she hears no sound whatever. She has also considerable irritation about the larynx, and an accumulation of adhesive mucus there in the morning; also a feeling of "weakness" at the top of the *sternum*. She considers her general health good, although she has rather a delicate appearance. Appetite and digestion good; bowels and catamenia regular. No evidence of disease of chest upon physical exploration. The *meatus auditorius externus* and *membrana tympani* have a normal aspect; the mucous membrane of the fauces also has a tolerably healthy appearance, and there is no hypertrophy of the tonsils. The ticking of a watch is heard at the distance of four inches from the left ear, and about half an inch from the right with some difficulty. Hears no noises in the ears, and has had no pain there. Asked the advice of a professor in one of the medical colleges of the city, who applied nitrate of silver to the throat with a probang, with some relief to the throat symptoms.

Treatment.—Not to go into a tedious detail of the daily treatment, it is sufficient to state that a solution of the nitrate of silver was applied to the throat four times at an interval of three or four days, with relief to the symptoms referable to that part. She was directed to keep up a moderate pustulation over the upper part of the sternum and under the clavicles, with croton oil liniment; and a solution of the iodide of zinc in equal parts of glycerine and water was applied directly to the orifice of the Eustachian tube by the following method: The nozzle of a small glass syringe was inserted into the open end of a piece of elastic catheter (No. 4 or 5), and secured by a wrapping of thread. A small portion, some twenty or thirty drops, having been drawn into the syringe, the catheter was introduced into the nostril, with the lower *fenestra* looking outwards, and pushed backward to the posterior wall of the pharynx, about three inches and a quarter; the *fenestra* being then just opposite the opening of the Eustachian tube,[1] and upon using the injection with some force, the fluid was, of course,

[1] An English (Hutchinson's) catheter is preferable, as this has only one *fenestra* and this in a favourable position for our purpose.

thrown directly upon it. A smarting sensation extending to some little distance down the throat, and forwards towards the nose, was felt for an hour or two, but was not complained of. The strength of the solution was five grains to the ounce, increased to ten or more as the parts became habituated to its use. The application was made daily (on alternate days to either side), until the 14th July, with an interruption for four or five days during the patient's temporary absence in the city; after which it was continued every other day for ten days longer, with the following result. At the expiration of a week, there was very sensible improvement in the hearing of the left ear, and at the end of another week, the hearing on this side was normal, and the application to it discontinued. The improvement of the right ear was more gradual, but still progressive, and within four weeks the hearing on this side was also perfectly restored, and as good during mastication as at any other time. Patient was also kept on the use of Garnier and Lamoureux's *dragées* of the citrate of iron, six grains per day, with considerable improvement of her general health and strength. She is now, several weeks after the discontinuance of the treatment, apparently well in every respect.

CASE II. Mrs. L., aged 40, general health good, applied to me August 12th, 1859. Says that, for some weeks past, she has had a "fulness and pain" in the region of the lachrymal sac and left nasal passage, also an increasing deafness in the left ear. She says the ear frequently, during the day, appears to be "stopped up," and it is at the same time the seat of a buzzing noise, but that, on *bowing the head forward* for a short time, the obstruction seems to be temporarily removed, and the buzzing ceases. The *meatus auditorius* and *membrana tympani*, as well as the fauces and tonsils, appear healthy.

Treatment.—Applied a leech to the Schneiderian membrane on the left side, which was followed by a considerable flow of blood, and relieved the nasal symptoms considerably; but the deafness remained the same. Used the injection of the *iodide of zinc*, as in the last case, with considerable relief to the deafness after the first application, and with entire relief after the third; the application having been made every other day.

The two cases just described will sufficiently indicate the nature of the deafness which it is proposed to treat by a simple application to the orifice of the Eustachian tube, and the manner of making this application. The particular kind of injection is perhaps not a matter of much importance. I was first induced to use the *iodide of zinc* from the fact that it has been sometimes found efficacious in making a favourable impression on chronic engorgement and hypertrophy of the tonsils, a form of disease usually very intractable under all other medical treatment, and because it is much

less disagreeable and persistent to the taste than *nitrate of silver*, and does not stain the clothes or the skin so indelibly.

It was at one time extremely fashionable among aurists to attack the Eustachian tube, and through it, the *cavitas tympani*, for the cure of various forms of deafness, by means of sounds, catheters, medicated air douches, and injections; but these applications were eventually found to be more injurious than useful in a majority of cases, and they have been rapidly falling into disrepute. It has not, however, been customary to make the application simply to the *orifice* of the tube, at least in an efficient manner, while it is here that "throat deafness," and deafness arising from disease of the *cavitas tympani*, without doubt, as a general rule, have their origin. Disease of the Eustachian tube, at any other part than near its faucial opening, is one of the rarest affections of the ear, as shown by actual statistics (*see* Toynbee and Wilde), therefore, it can seldom be requisite, even if the attempt were devoid of danger, to make applications throughout its whole extent, especially as the effect of a stimulant on a mucous canal extends considerably farther than the point of application. When, on the other hand, we call to mind the numerous affections of the fauces which prevail in almost all climates, but especially in ours, both from common and specific causes, but more particularly from the phthisical and strumous diathesis, and from constant exposure to the ever varying temperature and hygrometrical state of the atmosphere, we cannot wonder that the Eustachian tube, always influenced by these affections, should be frequently attacked with chronic disease. Both Toynbee and Wilde, our best authorities, agree that chronic disease of the cavity of the tympanum is by far the most common cause of deafness. And it is not at all improbable that this disease (chronic inflammation generally) is the result of the extension of repeated attacks of inflammation of the faucial extremity of the Eustachian tube; which, if recognized, and efficiently treated in time, might perhaps generally be arrested. That most intractable form of inflammation of the ear which results from *scarlatina*, no doubt, as Mr. Wilde believes, is the result of an extension of disease from the fauces along the tube, and this in all probability might be prevented by a timely and persevering application of appropriate remedies to the original seat of the disease, the extremity of the tube. So, after *measles* also, especially in strumous subjects, we should always be on the watch for this difficulty.

Even in the time of Hippocrates, as Mr. Wilde informs us, it was remarked that "quinsy" was followed by closure of the Eustachian tube, and consequent deafness. But, unfortunately this closure was then, as it is most generally now, regarded as the result of the enlargement of the tonsil, and remedies consequently addressed to this part. Mr. Wilde most strenuously contends against considering deafness as dependent on tonsillitic enlargement, and probably with good reason, for it does seem almost im-

possible that an ordinary hypertrophy of the tonsil, however great, should extend so far upward and backward as to encroach upon the orifice of the tube. But in cases of tonsillitis, the inflammation, of course, extends to the adjacent parts, for instance, to the Eustachian tube, which is near by, and eventually tends just as effectually to produce its closure, more or less complete, by inflammatory exudation, as if the enlarged tonsil itself pressed upon it. This may satisfactorily explain the discrepancy of opinion among aurists as to the cause of "throat deafness." But the ablation of the tonsil has not unfrequently, according to the statements of reliable aurists, produced an almost immediately beneficial effect on the deafness. And why not? The hypertrophied body, three or four times it normal size, has kept up by its irritation a state of chronic inflammation of the adjacent mucous membrane, and its removal is not unnaturally followed by a favourable change in the condition of this membrane.

The uncertainty of all treatment addressed to chronic disease of the ear, and especially to disease of the Eustachian tube and cavity of the tympanum, the danger attending most of the methods of treatment recommended, even in skilful hands, must be my excuse for giving such prominence to the two cases detailed in this paper, cases possessing, *per se*, so little novelty or interest.

COLD SPRING, August 24th, 1859.

ART. VIII.—*Arsenic in Menorrhagia, Leucorrhœa, &c.* By ARTHUR P. BURNS, M. D., Ellicott's Mills, Md.

I DESIRE to impress upon the profession my conviction of the great powers of arsenic in menorrhagia, leucorrhœa, hemorrhage in threatened abortion and after delivery, and excessive lochial discharge. I have been long in the habit of using it in those affections, and it has never failed in my hands to relieve the most obstinate cases. My usual plan of treatment has been, in menorrhagia, if called to the patient during the hemorrhage, to give immediately ten to twenty drops of Fowler's solution, according to the severity of the case, and repeat it in doses of ten drops every fifteen to twenty minutes, until the hemorrhage is checked. I have never had occasion to push it to a dangerous amount. Care must be exercised in its administration, as it will entirely suspend the menstrual secretion. I then give five to ten drops, three times a day during the menstrual period, and in the interval, three to five drops, three times a day. In leucorrhœa, I give three to five drops of Fowler's solution, three times a day, and steadily persevere in the use of it until a cure is effected; sometimes I use injections,

counter-irritation to the sacrum by blisters, &c. In either affection, if there is debility, I use tinct. cinchona comp. ℥iij; tinct. cantharis ℥ij. M. Dose, a teaspoonful, three times a day; sometimes add spts. æther nit. and tinct. opii camph.

To show the great power and peculiar efficacy of the remedy, I give a report of two very obstinate and long-standing cases that came under my care. I could cite numerous cases, but think these will suffice:—

CASE I. An unmarried lady, aged 23; anæmic; menstruated at 15. Excessive menorrhagia and uterine leucorrhœa from the beginning, which continued in spite of all the remedies used by various physicians, uninterruptedly, until she came under my care. She was a great sufferer from spinal irritation (sympathetic), neuralgia, and intense agony during menstruation. The menstrual periods were very irregular, varying from one to three weeks, the slightest exciting cause being sufficient to establish the flow, which had continued at times for weeks without intermission. I put her upon five drops of Fowler's solution, three times a day, increased to ten drops ter die during the menstrual period, vaginal injections, blisters to the sacrum, and the tonic mixture above; a steady perseverance in the remedies for four months effected a cure. She now has no menorrhagia, no leucorrhœa, no spinal irritation, and but rarely an attack of neuralgia, which was before a constant attendant. This case would not bear iron in any form.

CASE II. An unmarried lady, aged 25; plethoric; menstruated at 14. Menorrhagia and excessive vaginal leucorrhœa from the beginning; the menstrual periods were irregular, and at one time the flow continued uninterruptedly for eight months, when the case came under my care. She menstruated irregularly every second or third week, with exhausting leucorrhœa in the intervals, causing an intolerable feeling of dragging down, and pain in the back upon the slightest exertion. Ordered ten drops of Fowler's solution, three times a day, during the menstrual period, and five drops three time a day, in the interval, with cold ablutions, night and morning, to the sacrum, pubes, &c.; the treatment was continued for three months. She now menstruates every fourth week, and has no leucorrhœa.

I may state here that I have persevered for months, continuously, in the use of the remedy without any unpleasant effects. I know of no remedy so effective and so prompt in arresting hemorrhage in threatened abortion; it seems to suspend at once the contractions as well as the hemorrhage. I usually give twenty drops for the first dose, and ten drops every fifteen to twenty minutes thereafter, until the hemorrhage is checked. In hemorrhage after delivery, it is equally efficacious, used in the same manner and doses. In excessive or long-continued lochial discharge, in doses of five to ten drops ter die, in conjunction with the tonic mixture, it acts promptly and efficaciously. I have had cases that had resisted other treatment to yield speedily to this. In one case, in which the discharge continued for weeks after the usual time, with occasional hemorrhages, resisting other treatment, it yielded promptly to ten drops ter die, and the tonic mixture. Its *modus operandi*

I am unacquainted with. That it does not act by inducing uterine contractions appears certain, as it will suspend them in threatened abortion, and, I believe, in large doses, would suspend them at the full period of gestation. I believe it to be a general hemostatic of great power, though I have never had a fair opportunity of testing its powers, and equally as efficacious in hæmoptysis, &c., as it is in menorrhagia.

ART. IX.—*Aneurism of the Right Carotid and Subclavian Arteries. Ligation of the Arteria Innominata.* By E. S. COOPER, M. D., Prof. of Anatomy and Surgery in the Medical Department of the University of the Pacific, San Francisco.

ANEURISMS are frequently found in different parts of the body at the same time, but they seldom occur simultaneously in two arterial trunks so large as those of the subclavian and carotid, and so close together as to coalesce.

The walls of the two aneurisms in this case were united by adhesions of a firm character, and the pulsation produced was the same as that of one large-sized aneurismal tumour.

From the extent of the surface, which was found to be the seat of pulsation, I was led from the first to think the subclavian was implicated in the aneurism, though the history of the case rendered it almost conclusive, that the primitive carotid had been originally the seat of the disease.

It was this complication, as I supposed, that rendered the operation on the distal side of the tumour impracticable. Having decided upon ligating the innominata, and having the patient conducted through a preparatory course of treatment for a few days, the operation of ligating the innominata was performed.

My assistants were Drs. B. A. Sheldon, Grover, Finnigan, and Professors R. B. Cole and J. Rowell.

Operation.—The patient being placed upon his back, with the head and shoulders elevated, I made an incision, four inches long, in a line parallel, and half an inch above the upper margin of the clavicle, commencing internal to the sterno-clavicular articulation, and terminating near the anterior margin of the trapezius muscle. A transverse incision was now made, commencing a little to the inner side of the centre of the first, and extending upwards, external to the sterno-cleido-mastoideus muscle, terminated two and a half inches above. The parts were then dissected away to expose the tumour, which it was soon ascertained extended beneath the clavicle, and that it pressed hard upon the posterior surface of the summit

of the sternum. I tried long to make room for the application of a ligature to the innominata without removing more important structures. Finding this, however, almost, or quite, impossible, I proceeded to remove the summit of the sternum, and the sternal extremity of the clavicle. This barely made room sufficient to enable me to reach the arteria innominata, owing to the large size of the aneurismal tumour at that point. In fact, one-third of the innominata was already dilated by the aneurism, so that I had to ligate that vessel within three-fourths of an inch of the aorta. The patient lost but little blood during the operation, and was comparatively comfortable for five days. After that time, however, he became restless, had dyspnœa, retention of urine, and gradually sank, until the 9th, when he expired.

Autopsy.—The cavity of the right side of the heart was slightly dilated. The right lung was adherent to the posterior wall of the chest, and was slightly tuberculated. Serum was found within the pleura and pericardium. Purulent matter was found in the centre of the right kidney, while the left one was healthy. The liver, alimentary canal, and brain were found free from the evidences of disease.

Strange to say, up to the period of the operation the patient had complained of no derangement of the urinary apparatus, though the partial disorganization of the right kidney had evidently much to do in hastening his death.

SAN FRANCISCO, March 20th, 1859.

TRANSACTIONS OF SOCIETIES.

ART. X.—*Summary of the Transactions of the College of Physicians of Philadelphia.*

March 2. *Effect of Respiration on the Size of the Heart.*—Dr. DA COSTA read the following note in continuation of a previous paper:—

Several months ago, when conducting some observations respecting the influence of the respiration on the position of the heart, I was struck with the very decided change which occurs in the sounds and in the extent of percussion-dulness during a held expiration. The dulness increases markedly, especially in an upward and transverse direction; the sounds, particularly the first, are manifestly altered. The question presented itself to my mind, how far these phenomena were due to a mere change of position of the heart and the adjacent borders of the lung, or how far they might be owing to a distension of the heart during the prolonged expiration?

To arrive, if possible, at some conclusion on this subject, I instituted a series of experiments, with the kind aid of several professional friends, and especially am I indebted to Drs. Brinton, Kane, and Hammond, for their assistance.

Experiment.—A rabbit was etherized, and the operation of tracheotomy performed. The heart was previously listened to, and its action was observed to be very rapid; the chest was then laid open and the organ exposed. On cutting away the pericardium, whilst respiration was kept up through a tube inserted into the trachea, it was immediately noticed that during a forced inspiration the left auricle and ventricle, and, indeed, the whole heart, as far as it was exposed, appeared small; whilst, when the stop-cock of the tube was turned off during an expiration, both the ventricle and auricle were distended to almost twice the size they presented during a full inspiration. The longer this state was kept up the greater became the tumefaction on both sides, until it finally seemed as if the heart would burst. But a full inspiration relieved it, and it returned to its former shape. By careful dissection, a view of both sides of the heart was obtained, and the same appearances were recognized on the right side; that is, like on the left side, when the lungs were permitted to sink back and the breathing stopped, the ventricle and the auricle swelled enormously, but immediately diminished when the pulmonary tissue was again filled with air. The effects of a continued and held inspiration were not particularly studied, but

it was specially noted that the same phenomena described as occurring in expiration were obtained by pressing on the lung, and emptying it mechanically of the air it contained.

Exp.—The same experiment was repeated on another rabbit, and with the same results. The swelling of the auricles was not as marked; that of the ventricles was. It was especially noticed that during the fixed expiration the ventricles were distended both during their contraction and relaxation, and that the action of the heart became very laboured. The point of the heart appeared rounded.

Exp.—On a frog, I was enabled to ascertain the precise difference in the size of the heart during a fixed expiration and inspiration. The two auricles measured in their transverse diameter 17½ mm. during a full expiration; 16 when the lungs were moderately filled with air; 15½ in a full inspiration, and only 14 mm. during the most expanded state of the lung. The ventricle varied by 2 mm. during the extremes of the acts of respiration.

Now these experiments certainly prove that during a protracted state of expiration, in which the blood is but imperfectly, or not at all, aerated, *both* sides of the heart become clogged with blood.

Exp.—To enable me to study the succession in which this distension occurs, Dr. Brinton separated the sternum of a dog which had been poisoned with woorara. Artificial respiration being kept up, we noted the following: "The rapidity of the heart's pulsation, immediately after the stoppage of the breathing, and whilst the lungs are moderately collapsed, is the same as before—28 beats in ten seconds. Both ventricles become somewhat swollen soon after the respiration is discontinued, but we cannot decide which, if either, begins to swell first. On the right side, the auricle and the ventricle both swell, and, we think, without being too positive, that the ventricle commences to swell before the auricle; *we are sure of it as regards the left side.* The pulmonary artery enlarges considerably before the pulmonary veins or the left auricle. At a later period the left auricle and the pulmonary veins increased in size almost simultaneously, but the auricle first. Blue blood appears in the pulmonary veins and on the left side of the heart before there is any excessive swelling of any part of the organ. As the pulmonary artery becomes engorged, a well-defined clacking noise is distinctly audible."

I repeated this experiment some time afterwards on another dog, so as to satisfy myself as to the relative time of swelling of the ventricles, auricles, and pulmonary artery, and observed exactly the same.

It demonstrates that when air is prevented from entering the lungs, and they recede, both sides of the heart distend—the ventricles before the auricles, the pulmonary artery before the pulmonary veins. It is not, nor indeed are any of the observations, conclusive as to what takes place during a fixed inspiration; but it is as to what happens when the breathing is

arrested whilst the lungs are only moderately distended with air. The question now arises, and a difficult question it is to solve, in how far is it probable that the same phenomena occur in man during a fixed expiration? Can we, taking the experiments just detailed as a starting point, assert that they occur at all? Now I am perfectly aware that no such states, precisely as those described, can in the human subject supervene on the prolonged expiration. I am perfectly aware that in experiments on the respiration of animals we have to take into account the element of asphyxia; that on the one hand the altered pressure on the thoracic viscera and the more perfect collapse of the lung, which the introduction of air into the cavity of the chest occasions, is very different from the ordinary condition of things; and that the movements of a healthy human chest are not the same as the thoracic movements in an animal whose breast-bone has been removed. But the visible enlargement of the ventricles, when the respiration is stopped, occurs so rapidly that I cannot but think that the same takes place during a fixed expiration in man, although perhaps to a less degree. There are other facts which render this extremely likely, namely, the swelling of the jugular veins, during a full expiration, and their diminution in inspiration; the changed character in expiration of the pulse, which is apt to quicken, and still more constantly becomes much feebler, not only at the wrist but in the temporal arteries. We can add to these that at the same time the impulse of the heart becomes more distinct and extended, and the sounds alter in character, over the left as well as over the right ventricle.

I should speak more positively on the subject were I able to say more positively what is the exact mechanical effect of the acts of respiration on the pulmonary circulation. The opinions of careful physiologists vary widely on this point; yet the weight of argument seems to lie on the side of those who maintain that in expiration the circulation through the lung is accomplished with some difficulty. If so, the explanation of the enlargement of the heart would be this: The circulation is somewhat obstructed in the lung; the right heart becomes engorged; the blood flows to the left side; but it does not leave it very freely, because it is not very perfectly aerated if the expiration is continued a long time.

This, too, will only be admitted if the analogy with what occurs in experiments on asphyxia in animals be admitted; and if it be conceded that the hindrance to the flow of blood in this state occurs to a great extent by the capillaries all over the body refusing to receive the impure blood the heart injects into them—a fact which some of the experiments of Dr. John Reid render more than highly probable. Or, not to go as far as this, I will say that if there is any reason why the general capillary circulation should be retarded during a fixed expiration, it will explain why the blood accumulates in the heart and venous system, and does not pass as freely into the smaller arteries.

There are other points regarding the pressure on the walls of the arteries and veins during the acts of respiration that have been elucidated by the labors of Magendie, Poiseuille, Ludwig, and Donders, which ought to be taken into account. But I shall not now enter further into the subject.

The difficulty of drawing conclusions on a matter as complicated as this is very great. Nor do I intend them to be final. I have merely wished this evening to call the attention of the College to them, in hopes of being able at some future time to furnish more extended data.

I cannot, however, leave this subject without alluding to the erroneous view, still so prevalent, that in asphyxia the blood collects in the venous system and on the right side of the heart, and that the non-aerated fluid does not reach the left side of the organ. If the experiments above detailed prove nothing more, they certainly prove how faulty is this still generally received doctrine; they certainly show that black blood may distend the left side of the heart. Whether the same phenomena occur if asphyxia is brought on whilst the lungs are fully inflated, I cannot say, since I have not as yet studied that question. But I can say that, if they do occur, they are not produced so quickly.

Arsenic in Obstinate Chronic Bronchitis.—Dr. WOOD observed that his attention had long since been attracted to the probable existence, in certain cases of obstinate chronic inflammation, no matter in what part of the body it might be situated, of the same state of system which gives extreme obstinacy to some cutaneous eruptions, such as psoriasis and lepra. This view is of practical importance; as arsenic, having proved a most effectual remedy in the cutaneous affections alluded to, might be equally beneficial in obstinate chronic inflammation elsewhere, if possessed of the same systemic character. The idea is not a new one. Professor Simpson, of Edinburgh, having been led to the supposition that a certain obstinate affection of the bowels, not uncommon in that city, was of a nature similar to cutaneous eruptions, employed arsenic in it with very beneficial effect. The same remedy has been long employed in obstinate periostitis, and with great asserted benefit in chronic nodosities of the joints of a rheumatic character. I have frequently thought of using it in chronic bronchitis, which had resisted ordinary treatment, but never carried the idea into effect until, in a case of nine or ten years' duration, which came under my notice some time since, connected with psoriasis of the face, I had a fair opportunity of trying the remedy. Under the use of Fowler's solution, in the dose of from three to five drops, three times a day, continued for six or eight weeks, the cutaneous eruption and chronic bronchitis were both so much relieved that the remedy was discontinued. Indeed, both affections had almost, if not quite, disappeared; and the patient had not been equally free from his bronchial affection at any time for years before. In consequence, however, of apprehension of injury to the stomach, not well founded

I believe, he prematurely omitted the medicine; and three or four months afterwards both affections began to reappear. I am again using the solution in the case, and thus far, with a similar result.

Stomatorrhœa Vicarious to the Menses.—Dr. WOOD also made the following statement: "During my last term of service in the Pennsylvania Hospital, a case of stomatorrhœa occurred, which appears to me worthy of notice. The patient was a woman, of about twenty-five years of age, in other respects apparently in good health. She had for three months been affected with a very profuse and disagreeable discharge from the mouth, which she herself supposed to proceed from the stomach. I soon, however, convinced myself that the liquid discharged was a mixture of saliva and a mucoid secretion from the lining membrane of the mouth and fauces. It was nearly colourless, somewhat viscid, and of an unpleasant odour and taste, and appeared to be constantly flowing. As there was evidence of some inflammation of the mucous membrane, I considered the case one of simple chronic stomatitis, and treated it accordingly, both by general and local remedies for a considerable time, but without the slightest advantage. My attention having at length been directed to the menstrual function, I found that it had been arrested about the same time with the occurrence of the discharge from the mouth. Thinking that the two affections might be connected, I put the patient on the use of aloes and the pill of carbonate of iron, with the hot hip-bath daily, which apparently had the effect of restoring menstruation, after which, the affection of the mouth ceased immediately. This case may prove useful, if in no other way, by inducing an early inquiry into the state of the menstrual function under similar circumstances."

May 4. *Common Salt in Epistaxis.*—Dr. HAYS stated that he had been induced, by the report made to the College in November last of a case of epistaxis promptly arrested by the administration "of common salt taken into the mouth in doses of a teaspoonful" (see *Trans. of Coll.*, Nov. 5, in *Am. Journ. Med.*, April, 1858, p. 390), to try the remedy in an obstinate epistaxis to which he had been recently called.

The subject of this case was a lady 80 years of age, who was seized with profuse epistaxis about midnight, and when seen by Dr. Hays two hours afterwards was still bleeding copiously; at least eight ounces of blood had been lost. Cold applications to the nose, forehead and back of the neck, which had been already used, were repeated, and these failing, the salt was administered as recommended by Dr. Morris, but without the least benefit. The hemorrhage was finally arrested, but not until about fourteen ounces of blood had been lost, by the application to the inner surface of the nostrils by means of a camel's hair brush, of the tinctura ferri chloridi. At first this was applied diluted with about one-third of water, but afterwards it was used still stronger.

It is proper to state that the difficulty in arresting this hemorrhage arose in great part from the impossibility of preventing the patient from blowing her nose and thus displacing the clot or from drawing out the plug with her fingers. For the patient, though willing to do what was desired, from her weakness of memory would repeatedly do that against which she was especially cautioned, and despite the watchfulness of her attendants frequently renewed the hemorrhage by displacing the coagulum.

DR. LEVICK said a case of epistaxis had come under his notice, in which the use of common salt had entirely failed to arrest the hemorrhage. The patient was a man of about forty years of age, a free liver, who had for several years been liable to such an attack in the month of February. No attempt was made to suddenly check it; but when it became exhausting, common salt was resorted to, but proved entirely unavailing. The bleeding was at last arrested by plugging the nostrils with conical pledgets of lint, rolled in powdered kino.

DR. RUSCHENBERGER also had tried the salt, as recommended by Dr. Morris, in a case of obstinate epistaxis, without effect. The patient was an old gentleman; the bleeding continued until the plug of lint was resorted to, as in the case referred to by Dr. Levick.

DR. F. BACHE remarked, in reference to remedies proposed for hemorrhages, that it was often difficult to distinguish the event from the result in these cases, on account of their tendency to a spontaneous termination; and that, hence, the accidental coincidence of a cessation of the hemorrhage with the administration of a remedy, might lead to a very erroneous estimate of the value of the latter.

DR. HEWSON referred to a case of epistaxis occurring in the course of an attack of purpura, in which the use of Monsel's persulphate of iron, internally, in doses of two grains dissolved in a drachm of water, every four hours, promptly checked the hemorrhage, and gradually cured the general disease.

Ligature of Right Subclavian Artery for Axillary Aneurism.—Dr. H. E. DRAYTON read the following note of a case in which this operation resulted fatally, from pyæmia, on the 22d day:—

I. W., aged 37, tailor, born in Germany, general condition feeble, was admitted into the Episcopal Hospital of Philadelphia, March 25th, 1859, for injuries of right shoulder and side, caused by a recent fall. As the diagnosis was uncertain, the arm was simply placed in a sling, and bathed with volatile liniment. In this condition I found him, on taking charge of the wards as attending surgeon, on the 1st of April. I examined him repeatedly, but could make nothing out of the case, except that there was constantly greater pain than the apparent injuries accounted for, although there was no marked swelling; on the 7th of April, however, I discovered

a distinct aneurismal sound at the anterior part of the axilla, and under the clavicle.

The symptoms continuing, a tumour rapidly developing, and the arm vibrating responsively to the aneurismal thrill, a consultation with my colleagues, Drs. Hunt, Thomas, and Kenderdine, was held April 13th. They confirmed the diagnosis, and advised immediate operation, but the patient would not consent.

The symptoms increased in severity until the 16th of April, when the patient agreed to an operation, and the next morning was appointed for the purpose.

On the morning of the 17th an evident change had taken place; the tumour was reduced in size, with feebler throbbing, and diminished sounds; as also there was no pulse below the tumour, and the man appeared to be much easier, we were led to hope that such alteration had taken place in the condition of the parts as might possibly result in a spontaneous cure. The operation was consequently again delayed.

This improvement continued until the 21st, when the tumour increased nearly one-third in twenty-four hours, now presenting an enormous swelling in the axilla, with enlarged blue veins running over it. The arm was œdematous and much reduced in temperature. The radial pulse had returned, as well as a feeble though distinct pulsation in the tumour, with intense pain.

On the 22d, assisted by my colleagues, and the resident physicians, Drs. Grier and Ingersoll, I performed the ordinary operation of tying the artery above the clavicle. This was tedious, as from the great swelling there was such displacement as to render finding the vessel difficult. The artery must have been tied at least three inches below the surface. The ligature was passed by Gibson's aneurismal needle; and, upon being tightened, immediately arrested the flow of blood to the tumour, causing at once an entire cessation of both sound and pulsation. No vessel having been wounded, there was very little loss of blood.

From April 22d to May 1st there was some improvement, the tumour and œdema having diminished, and the temperature having risen in the arm. On the 26th there was slight pulsation at the wrist through the collateral circulation, and the wound was gradually uniting. May the 1st, fever set in and, during the night, the man became delirious, jumped out of bed, and tore open the wound, but fortunately without disturbing the ligature; this came away on the 9th, without any secondary hemorrhage. After this date he did not improve, but gradually became more feeble, suffering pains in the joints, with hectic flush and profuse sweats, delirium, coma, until he was released by death, which took place on the 14th.

Autopsy, 36 hours after death.—Rapid decomposition. Brain, lungs, liver, and heart healthy; large quantity of fluid in pericardium. In the sac of the aneurism there was more than a pint of thin blood streaked with

pus. The sac had opened into the shoulder-joint. The parts were so much disorganized that it was impossible to inject them. The ligated subclavian was found impervious, and adherent to the surrounding tissues. Its humeral end was shrunken to the size of a knitting needle. The axillary and brachial arteries were so soft and flat as to be mistaken at first for veins; these, on the contrary, being so filled in places with coagulated blood as to appear like arteries. In various parts of the body the veins were found filled with pus. The origin of the aneurism was found to be a small opening in the axillary artery, which vessel was no doubt prone to rupture, on account of a diseased state, resulting from the long continued use of a crutch, rendered necessary by a twice-broken, badly united femur.

During more than ten days immediately following the occurrence of the fall there was no tumour; but after the first symptoms had appeared, there was such rapid development and such acute pain, as to give rise to a very reasonable suspicion of malignant growth. The tumour could not be emptied by pressure. The cause of death was, undoubtedly, phlebitis.

Chronic Inflammation and Softening of the Brain.—Dr. LEVICK exhibited the brain of a woman who had died, fourteen hours before, in the Pennsylvania Hospital, and gave the following history of the case: The patient was an unmarried woman, æt. 38 years, who had been employed as an upper servant, and whose duties had not been arduous. Her health had been good until six months previously, when it was noticed that there was some mental confusion; that, in arranging the furniture of a room, it was placed in an improper position, bureaus out in the middle of the room, etc. Somewhat later than this, she began to complain of pain in the right side of her head, became of irritable temper, and restless. The pain, which would disappear entirely for a time, closely resembled that of neuralgia, and was treated with valerianate of ammonia without any permanent benefit. About this time she complained that she was unable to hold her needle long enough to sew. Six weeks ago, the pain became intense, and she was obliged to remain in her bed; delirium and excessive restlessness now set in, continuing for a time, and then disappearing. Two weeks later, she was brought to the hospital. She had at this time a cool skin, a frequent pulse, pain in the right side of the head, referred to the mastoid region and its vicinity, mouth distorted toward the right side, firm rigidity of the left arm, but no paralysis of the lower extremities, no want of control over the sphincters, and no sick stomach. The treatment consisted of a purge of compound powder of jalap, and the exhibition of small doses of calomel. She was unintentionally salivated, which was followed by a temporary alleviation of her symptoms. These soon returned with increased intensity; the tongue became dry and incrusted with sordes; these again disappeared, again to return, and she died this morning, her symptoms being rather those of exhaustion than of cerebral effusion. For a few days before her death

she had lost the control over her bladder and rectum. During the last ten days of her life it was found necessary to support her by the exhibition of wine and bark.

The brain alone was examined. It is of the usual size, appears to be healthy on its exterior, but the posterior portion of the right lobe, near its centre, has undergone very great disorganization. It is of a pale yellowish color, is infiltrated with serum, is completely softened, eroded, and resembles very much an abscess of the brain, although the altered and softened cerebral substance has not undergone the complete conversion into pus. It is an illustration of "red softening," the result of slow and long-continued inflammation, differing even in its physical aspect from the pale creamy softening of imperfect cerebral nutrition.

This case exhibited during life, to a very great degree, that remarkable fact connected with disease of the brain substance, which has not escaped the notice of pathologists, the partial or complete subsidence of all the symptoms of disease, their absence for a time, and their recurrence with a regularity almost identical with that of periodical fevers. So marked is this periodical exacerbation in some cases of disease of the brain, that the physician is tempted to resort to the usual anti-periodic remedy; and what is interesting is the fact that in some of these cases quinia seems to exert for a time a controlling influence. In this case the patient was at times so entirely freed from all her alarming symptoms that the suspicion of hysteria could not fail to suggest itself, soon to be dissipated by a violent manifestation of the most aggravated phenomena, reminding one of the gradual filling and sudden discharge of an electrical battery.

July 7. Emphysema, with deep-seated Tubercle of the Lung.—Dr. LEVICK remarked that a case of extensive disease of the lungs had recently been under his care in the Pennsylvania Hospital, in which the co-existence of two pathological conditions so antagonized each other as to permit the production of physical signs identical, or nearly so, with those of the healthy chest.

An old man, who had been sick for eight months, entered the hospital with hoarseness, cough, hectic, diarrhœa, and great emaciation, presenting, in fact, all the rational symptoms of tuberculous disease. On percussing the chest, it was found very resonant throughout, but not much more so than could be accounted for by its extreme emaciation. Auscultation revealed but little deviation from the natural respiratory sounds. There was some rudeness of the vesicular murmur below the right clavicle, and an occasional subcrepitant rale at the lower part of the lung; but, elsewhere, the respiratory murmur did not differ from that of health.

The man was found dead in his bed by the watchman on his nightly visit. Upon removal after death, the lungs did not collapse, and the entire superficial portion was found to be studded with large emphysematous vesi-

cles. Beneath this, and occupying nearly the whole of the deep-seated structure of the lungs, were large masses of tubercle surrounded by consolidated lung, the tubercle not having undergone softening. Even after death, percussion gave a clear sound, and the lungs floated in water.

Here, then, were two physical conditions opposed to each other, and, to some extent, equalizing each other. The dulness on percussion and increase of bronchial respiration, which should have been produced by such an amount of tuberculous deposit, were antagonized by the dilatation of the air-vesicles and the feeble respiration of the emphysema of the whole superficial portion of the lungs. Partial emphysema in phthisis is of frequent occurrence, perhaps almost a necessary attendant of the disease; but emphysema to such an extent, and producing such changes in the physical signs I had never before witnessed.

In such a case, very strong percussion might perhaps have developed the condition beneath, but ordinary percussion failed to do so.

Further examination showed the heart to have undergone fatty degeneration, and tubercles to exist in the bowels and the larynx.

Congenital Fissure of Upper Half of Sternum.—Dr. A. M. SLOCUM stated that he had seen, within a few days, a congenital fissure of the upper half of the sternum, in the person of Margaret D., æt. 25 years, a native of Ireland but a resident for four years in the United States. He reported the case from its similarity in some points to the noted one of Mr. Groux, though not possessing the same attraction, inasmuch as it does not admit of the interesting physiological experiments of which his is susceptible.

In form, the fissure is irregularly oval, complete above and extending down to a point opposite the ends of the third ribs, and being bordered on each side by a bony ridge with which the ribs articulate, and which is continuous with the body of the sternum. It is filled up with a strong ligament, probably elastic, covered by the common integument.

From the top of the clavicles to the bottom of the fissure is about three inches; during ordinary respiration the fissure is an inch and a half wide, but by a forcible effort it can be increased to two inches, and also diminished to only one-half an inch.

By making an attempt at inspiration, at the same time closing the nostrils and mouth to prevent the admission of air, a deep depression is formed in the fissure, and the bony ridges are brought very near together. By reversing these efforts, viz., by making a forcible attempt at expiration, after inflating the lungs, while the mouth and nostrils are closed, a large oval tumour, the full size of the fissure, is produced, which yields a clear sound on percussion.

During rest, there is no marked pulsation felt in the fissure, but any mental or physical exertion on the part of the patient causes a palpitation of the heart, the impulse of which is then readily seen and felt at the fissure. This case has not received as critical an investigation as its rarity demands.

FISKE FUND PRIZE ESSAY.

ART. XI.—*On the Effects of the Use of Alcoholic Liquors in Tubercular Disease, or in Constitutions predisposed to such Disease.* By JOHN BELL, M. D., of New York. The Dissertation to which the Fiske Fund Prize was awarded, June 1, 1859.[1] (Published by request of the Rhode Island Medical Society.)

IN writing upon the subject proposed for an essay, I have thought it advisable to restrict slightly its extent. I have had more especially in view the influence of the use of alcohol upon that form of tubercular disease which develops itself in the lungs. Pathologists unite in considering tubercle to be the same substance, wherever it makes its appearance, and, for this reason, in a philosophical treatise upon pathology, the various forms of disease which have their origin in this dyscrasy, should be considered in connection. But the effects of tubercle are so various in different organs that the treatment must necessarily be somewhat different; indeed, they can hardly be considered together with respect to any single remedy. I am not aware that alcohol has ever been recommended as a therapeutic or prophylactic agent in the tubercular hydrocephalus of children, neither has it in tubercular disease of the external lymphatic glands, or those of the mesentery. There are no statistics extant to show the effects of alcohol in those predisposed to these diseases, for they are almost peculiar to that time of life when alcohol is not used as a beverage; and one would hardly feel justified in *experimenting* on such patients with such a weapon. It is for these reasons that I have confined myself to somewhat narrower limits than the subject implies.

Phthisis is by far the most frequent form of tubercular disease, and is much more fatal than all others united. It is also in this form that alcohol has been especially recommended. From these considerations, I think it will appear that this curtailment of the subject will rather increase the value of the essay, inasmuch as the conclusions can be arrived at with greater certainty. In the application of statistics to medicine one of the first requi-

[1] The Trustees of the Fiske Fund, at the annual meeting of the Rhode Island Medical Society, held in Providence, June 1, 1859, announced that the premium of two hundred dollars offered by them in 1858, for the best dissertation on the following subject: "*The Effect of the Use of Alcoholic Liquors in Tubercular Disease, or in Constitutions predisposed to such Disease, to be shown, as far as possible, by Statistics,*" had been awarded to the author of the dissertation bearing the motto—

"*Occasio præceps, experientia fallax, judicium difficile.*"

And upon breaking the seal of the accompanying packet, they learned that the successful competitor was John Bell, M. D., of New York.

JAMES H. ELDREDGE, M. D., East Greenwich,
CHARLES W. PARSONS, M. D., Providence,
HENRY E. TURNER, M. D., Newport,
Trustees.

S. AUG. ARNOLD, M. D., *Secretary of the Fiske Fund Trustees.*

sites for accuracy is to dissect out the subject from all its connections, and present it clear and single to the view.

It is undeniable, that within a few years there has been a growing opinion that the use of alcoholic liquors is advantageous in the case of persons predisposed to phthisis, and even in those already the subjects of tubercular deposition in the lungs. And this has been the case not only with the public at large, whose appetites or pecuniary interests have had more to do with the formation of the opinion than proof of any form or degree, but also with medical men, ever ready to seize upon anything which may prove of advantage in so common and destructive a malady.

But the history of the therapeutics of consumption warns us that a favourable estimate of a remedy may gain general consent upon very slender grounds. The fate of tartar emetic, digitalis, iodine, and cod-liver oil (to a certain extent), each at one time believed to be almost a specific, ought to warn us to make a most careful and impartial estimate before acceding to an opinion which time may prove to have been too hastily adopted. To determine the truth or falsity of this opinion is the object of this essay, and it is intended, in accordance with the proposed terms of the subject, that it shall be done entirely by statistics. However strong objections may be brought against this mode of reasoning in medicine, if judiciously employed, every one feels the force of it. It would have been easy to gather the opinions of authors, or even to have ventured in person upon the fascinating ground of theory. But this method would have been as little satisfactory to the writer as convincing to the reader. The accumulation of statistics, however, is not an easy task. Favourable opportunities for a series of accurate observations are rare, and the power of taking advantage of them limited, unless, like the distinguished originator of the numerical method, one's whole time is devoted to this single object. But there are several causes which I have found to render the collection of statistics upon this subject especially difficult. The causes which are believed to be active in the production of tuberculosis are so numerous that it is absolutely impossible to disentangle a single one and determine its effects with certainty. Again, the moral stigma attaching to the use of alcohol renders it extremely difficult to determine the degree to which it is used. And, in exhibiting it as a medicine, patients are too apt to think it falls to them to regulate the quantity and frequency of the dose.

To determine a question of such intricacy, with any approximation to certainty, would require a long time and a multitude of labourers. Such a determination, however, it is the duty of the profession to arrive at as speedily as possible, not only on account of the importance of the question itself, but on account of its connection with morals. It is hoped that the statistics here presented may assist in the solution.

I have endeavoured to present all the facts attainable which bear upon the subject directly or indirectly; first giving the pure results, and afterwards presenting those points—impossible to be reduced to a numerical form—which it is thought may increase or diminish the confidence with which we should regard them. If any of these facts should seem to be too remotely connected with the subject, the excuse for presenting them is a desire to bring into one view everything which may assist in the solution of so difficult a question. It is perhaps not improper to state that the question has been approached without a bias to either side. It would have been easy, by a selection of such statistics as favour one view and the exclusion of all others, to arrive at the truth of a preconceived hypothesis with the

appearance of conclusive certainty. That this certainty does not appear to be arrived at will, perhaps, be considered sufficient proof of the impartiality and good faith with which the following facts have been collected and presented.

Before bringing forward those statistics which bear upon the solution of the question itself, it may not be unprofitable to glance at what has already been written upon the subject, and has been instrumental in giving that direction to public opinion in the profession which undoubtedly exists. After a careful examination of the literature of the subject, it is difficult to imagine how so wide-spread a belief could have arisen from so few recorded facts. In most of the monographs upon phthisis, allusion is made to the use of alcohol as a therapeutic agent; but it is generally only recommended in the later stages of the disease, when the strength is failing, and without intimating that it is thought to possess any especial curative power, further than to prolong the struggle for a time. Even here no facts are presented in support of the opinion, which must consequently be taken as a mere theory.

After a careful examination of all the leading medical journals of this country and the foreign ones which circulate here, I am able to present only the following instances where anything has been said of sufficient importance to be likely to give a direction to the sentiment of the profession: In the *New England Quarterly Journal of Medicine and Surgery* for 1843, Dr. Jackson has given the results of the autopsies of 35 persons who were known to have been intemperate; in these, tubercles were found in the lungs in five cases. He infers, therefore, that the use of alcohol is advantageous, so far as liability to phthisis is concerned. In the *New York Journ. of Med. and Surg.* for 1844, Dr. Peters has given the results of about 70 autopsies of persons of similar habits: from the appearance of the lungs he draws the same conclusions, as to the effects of alcohol, as Dr. Jackson does. In both these papers, these inferences are only incidental to the main subject.

In the *Nashville Journal of Medicine and Surgery* for 1856 is an essay by Dr. Washington, in which the author theorizes that phthisis has its origin in deficient respiratory action, and that the use of alcohol will overcome the defect by causing a more rapid breathing. In the *Buffalo Medical and Surgical Journal* of the same year is a short essay in which the writer gives his opinion in favour of the use of alcohol in phthisis. One or two cases are also related in which recovery from that disease occurred under its use. Various other agents, however, were used together with the alcohol.

Two theories as to the causes of the deposition of tubercle in the lungs, from each of which the utility of alcohol as a therapeutic agent has been inferred, have been extensively circulated in the medical journals. The first of these is a chemical one. It supposes that the tissues of the body, and particularly of the lungs, are too rapidly oxidized, and accordingly that alcohol, like cod-liver oil, might supply the fuel for this abnormal combustion, and thus prevent a continual waste, if not supply material itself. The other theory is a mechanical one, and attributes the origin of tubercle to a deficient circulation of the blood, and a consequent retrograde metamorphosis of the tissues. In this hypothesis, too, alcohol is the remedy, by increasing the action of the heart. These theories I shall not notice further; and they are only mentioned here because I regard them as having assisted in giving currency to the prevailing opinion. Besides these instances, where something like argument is adduced in favour of the opinion, there are numerous other instances where the belief is avowed without any attempt being made to support it.

It will be observed that very little positive proof has been offered to the public as yet on the question; and it seems to me that other reasons have combined to give the direction to popular opinion which seems to exist. The following, I believe, are two of those reasons: The first, that the intemperate are very frequently of an originally robust form and vigorous health, and have a plethoric, *anti-consumptive* look. This will be spoken of more at large in another place. The second: the advertisements of liquor dealers, scattered broadcast, have probably, like a continual dropping, effected, in some degree, their object. To such an extent has this been carried, in some parts of the country, that whiskey may be classed among the quack medicines with almost as much propriety as any of the popular nostrums of the day. So far as I am able to learn, these few notices in the public journals, and one or two other reasons, have furnished the only basis for a belief in the antagonism of alcohol and phthisis.

The facts which I have been able to adduce in connection with the question may be arranged, for the sake of convenience, in two series:—

1st. Those bearing upon the question of the prophylactic power of alcohol.

2d. Those relating to its effects upon the system when tubercle is already deposited in the lungs.

And under the first of these divisions:—

a. The number of deaths from phthisis, and the degrees of intemperance in different places, with the connection between them.

b. The frequency of phthisis at different times in the same place, and its connection with the greater or less use of alcohol.

c. The comparative frequency of phthisis in the sexes, and how it is influenced by the use of alcohol.

d. The frequency of phthisis among persons pursuing different occupations, and the degrees to which they are addicted to the use of alcohol.

e. The frequency of phthisis among individuals known to have been in the habit of using alcohol, and among the temperate.

f. The age at which phthisis occurs in the temperate and intemperate.[1]

g. The duration of the disease in the two classes.

The most accurate mode of deciding as to the relative degrees of intemperance, in different places, I believe to be the number of deaths resulting from that cause. Still, however, this is liable to lead us into error somewhat, as it is influenced largely by the habits of the place, and the kind of liquor most employed. In want of a better criterion, I have accordingly chosen it as sufficiently accurate to show on a large scale the truth or falsity of the prevailing opinion that those who make an habitual use of alcohol are decidedly less likely to be attacked by phthisis than the temperate. I do not claim more than a strong probability for the truth of indications arrived at by so uncertain a test.

The mortuary statistics of England are worthy of great reliance from their accuracy; and I have accordingly drawn largely on them. The following figures, drawn from the reports of the registrar-general of that country, are deserving of consideration. They exhibit the number of deaths

[1] The term "intemperate" is used very differently by different persons, according to their various estimates of the influence of alcohol, both physical and moral. Without intending to offer an opinion on this point, it will be used in this essay, for convenience, as applicable to those who make an habitual use of alcoholic liquors of any kind as a beverage. Those who often pass several days in succession without the use of them would be classed among the temperate, even if they occasionally used them to excess.

from phthisis and from intemperance, per million of inhabitants, for each of the eleven districts into which England and Wales are divided. The table gives the average for seven years from 1848.

Districts.	Deaths from Phthisis.	Intemp.	Districts.	Deaths from Phthisis.	Intemp.
No. 1	3019	116	No. 7	2730	30
" 2	2677	40	" 8	3398	63
" 3	2602	36	" 9	2778	45
" 4	3050	26	" 10	2447	49
" 5	2706	26	" 11	3236	24
" 6	2618	33			

Here there seems to be no very strongly marked connection between the number of deaths from phthisis and from intemperance. The 8th district, with a high average of deaths from intemperance, stands high in the list as to phthisis; while the 11th, lowest in point of intemperance, is also high in respect to phthisis. Of the 6th and 10th, both low in phthisis, one is low and the other high in intemperance.

It is obvious that, in consideration of the many other causes acting one way or the other upon the production of phthisis, we can draw no conclusion as to the actual effect of intemperance. And yet the figures are not without value, for we may, with considerable certainty, conclude from them that the use of alcohol has not that decided effect in preventing phthisis that many believe it to possess; if it had, we should see its influence in some approach at least to a regular series. It is plain that its effects, whatever they are, are so slight as not to appear in the multiplicity of other causes. It should be borne in mind that a considerable portion of the inhabitants of each district use alcohol; but the proportion is probably represented by the number of deaths from intemperance with an approximation to accuracy.

If four of these districts, where the deaths from intemperance are greater than the average, be compared with the others where they are less numerous, we shall have, per million of inhabitants,

	Deaths from Phthisis.	Intemp.
In 4 Districts	2910	68
" 7 "	2803	31

This would seem to indicate that the use of alcohol favors the production of phthisis. But the cities of London, Liverpool, and Manchester are included in the first class. In these, the deaths from phthisis are high. It is difficult to determine the result with accuracy for this reason. This comparison, however, goes to substantiate the statement made above, viz., that the effects of the use of alcohol cannot be very marked, either in preventing or causing the disease. Thus far, they show the popular opinion to be erroneous.

The following table shows the comparative annual average of deaths from phthisis and intemperance for each hundred thousand inhabitants in Boston for ten years, from 1835; in New York and Baltimore for the same time, and Philadelphia from 1830.

	Deaths from Phthisis.	Intemp.		Deaths from Phthisis.	Intemp.
Boston	291	35	Philadelphia	356	55
New York	455	33	Baltimore	411	29

In the comparison of these cities, we have a more favourable opportunity for arriving at the truth than in the previous table, as the population of them all is engaged in the same occupations, and has essentially the same

habits and modes of life. Yet here also, as far as we can perceive, the number of deaths from phthisis seems to have little or no connection with the degree to which the use of alcohol has been carried. At any rate, it is so slight as to be lost in the other causes of that disease. It would not be difficult to point out some of the causes which go to make the great difference in number in the deaths from phthisis in these cities. But the influence of alcohol could never be arrived at in such a way with certainty; and, as the table stands, it is sufficient to show the fact for which it was introduced, viz., that the use of alcohol has not a very marked effect, either in producing or preventing tubercular disease of the lungs. It would be easy to introduce an abundance of other facts to substantiate the conclusions already arrived at; but this can be done at the same time that we endeavour to determine what that slight influence may be.

b. In examining the number of deaths from phthisis and intemperance in the same place, at different times, we are freed from many of the causes of uncertainty inherent in those already given. In comparing the mortality of the same place, at different times, it is done under the favourable influence of the same climate, and the same habits and occupations of the citizens to a great extent. This method accordingly deserves a more attentive examination than the last; and we may expect more definite results. In the whole of England and Wales, the following table exhibits the mortality for a series of years.

	Deaths from Phthisis.[1]	Intemp.		Deaths from Phthisis.[1]	Intemp.
1838 . . .	59,000	343	1849 . . .	50,000	817
1839 . . .	59,000	424	1850 . . .	46,000	863
1840 . . .	59,000	424	1851 . . .	49,000	842
1841 . . .	59,000	448	1852 . . .	50,000	795
1842 . . .	59,000	405	1853 . . .	54,000	882
1848 . . .	51,000	797	1854 . . .	51,000	869

Here we have a marked increase in the number of deaths from intemperance, much greater than the increase of the population, during the period, will account for. That the number of deaths from this cause is a fair criterion by which to judge of the degree to which a population is addicted to the use of alcohol, is substantiated by the fact that during the same period the importation and manufacture of alcoholic liquors increased much more rapidly than the population during the same period (Chadwick, "Rep. of Poor-Law Commissioners"). Yet, during this period, there was an actual decrease in the number of deaths from phthisis, notwithstanding the large increase of population. This would be a strong argument for the prophylactic effects of alcohol, were it not for the fact that both the increase in the deaths from intemperance, and the diminution of those from phthisis, took place during the period from 1842 to 1848, when the causes of death are not reported. This fact renders it highly probable that it was owing to the change in nomenclature which took place during that period. During the last seven years, when the returns were much more accurate than previously, there was a slight diminution of the number of deaths, taking into account the increase of population, and at the same time a greater diminution in the deaths from phthisis. The general hygienic condition of the people had improved, and their wages increased during the period.

On the whole, I think that the only deduction which can be with propriety drawn from this table is that which has already been made, viz., that alcohol is not an active agent, either in preventing or producing phthisis.

[1] In round numbers.

The following table is similar to the last, exhibiting the mortality from phthisis and intemperance in London for the quarters ending with March of the following years :—

	Deaths from Phthisis.	Intemp.		Deaths from Phthisis.	Intemp.
1840 . . .	1910	19	1848 . . .	1630	56
1841 . . .	1838	19	1849 . . .	1626	62
1842 . . .	1781	21	1850 . . .	1792	39
1843 . . .	1787	31	1851 . . .	1811	53
1844 . . .	1904	30	1852 . . .	1872	48
1845 . . .	1972	39	1853 . . .	1823	64
1846 . . .	1571	51	1854 . . .	1869	63
1847 . . .	1873	59			

Here we have a marked increase in the number of deaths from intemperance up to the year 1847, after which period they remain nearly stationary. During the first of these periods, the deaths from phthisis rapidly diminished in number; and they also diminished, but in a less degree during the latter (allowance being made for the increase of population). This latter fact shows that during the whole period there was some cause not connected with the use of alcohol which was gradually reducing the mortality from phthisis. After eliminating this cause, whatever it may have been, I believe these figures, as they stand, are an argument in favour of the opinion that the intemperate are less liable to phthisis than others. They only need the corroboration which the same result in other places would give to become a very powerful one. Let us see whether they are so strengthened by a comparison with other places.

While in England there has been an increase in the use of alcoholic liquors, in this country, under the influence of the temperance reformation commencing about 1837 or 1838, there has been as marked a diminution, at least for a time. If the inference drawn from the statistics of London is correct, we should have an increase of phthisis in this country.

In Boston, from 1830[1] to 1840, 15.30 per cent. of the deaths were from phthisis; from 1840 to 1845, 15.13 per cent. were from the same disease. In the last of these periods, the annual number of deaths from intemperance had diminished more than one-half from what it was in the previous period (census of Boston, 1845). Here, with a marked diminution in intemperance, there is a slight diminution in the proportion of phthisis. This result at the same time goes to invalidate the correctness of the deduction from the statistics of London, while it corroborates the opinion already expressed as to the slight influence, either way, that should be attributed to the use of alcohol. The following table exhibits the number of deaths from phthisis and intemperance in New York for sixteen years. The table supposes the population of the city to be one hundred thousand each year.

	Deaths from Phthisis.	Intemp.		Deaths from Phthisis.	Intemp.
1835 . . .	530	36	1843 . . .	432	22
1836 . . .	549	27	1844 . . .	396	31
1837 . . .	513	45	1845 . . .	447	30
1838 . . .	418	38	1846 . . .	425	32
1839 . . .	436	39	1847 . . .	452	56
1840 . . .	415	32	1848 . . .	411	38
1841 . . .	454	35	1849 . . .	451	43
1842 . . .	398	25	1850 . . .	373	23

[1] I do not consider the returns of death from phthisis made before this period as sufficiently accurate to be depended upon.

Here there is no sufficiently regular increase or decrease of intemperance to make the table of much value.

The following comparison, though perhaps not of great value, will show which way the figures point. The average of deaths from intemperance is 35. In the years when it was less than this, the average number of deaths from phthisis was 429. In the years when it was greater, the number was 459. If this table is allowed to possess any value, it goes to show that the use of alcohol predisposes to phthisis.

In Philadelphia, during the period from 1830 to 1840, the deaths from phthisis and intemperance were as follows, per hundred thousand inhabitants, each year:—

	Deaths from Phthisis.	Intemp.		Deaths from Phthisis.	Intemp.
1831	385	78	1836	376	58
1832	380	87	1837	361	43
1833	351	76	1838	340	46
1834	335	62	1839	322	31
1835	356	40	1840	344	32

Here there is a sufficiently regular decrease of deaths from intemperance to make it obvious that it is not the result of chance. That this diminution was really accompanied by a corresponding diminution of intemperance is affirmed by Dr. Emerson (*Am. Journ. Med. Sci.*). In connection with the diminution in number of deaths from intemperance is a marked decrease in those occurring from phthisis. The series is sufficiently regular to allow us to draw the inference that they stand to each other in the relation of cause and effect, if we find the conclusion corroborated by other circumstances. There is certainly no other cause to which this result can be attributed, as, in other respects, the habits of the citizens underwent no change of sufficient importance to account for it.

The following table exhibits the same facts for the city of Baltimore from 1835 to 1845:—

	Deaths from Phthisis.	Intemp.		Deaths from Phthisis.	Intemp.
1836	338	54	1846	332	16
1837	417	37	1847	444	12
1838	422	48	1848	443	17
1839	401	30	1849	423	24
1840	351	35	1850	344	18
1841	432	28	1851	379	20
1842	444	87	1852	383	22
1843	431	14	1853	446	17
1844	440	10	1854	438	14
1845	432	20			

During the first five years, there is a decided diminution in the number of deaths from intemperance; afterwards, they are about stationary. The deaths from phthisis are nearly the same throughout. The first five years, which were much more intemperate than the last five, have about the same ratio of deaths from phthisis. On the whole, perhaps, this table favours, in a slight degree, an opposite conclusion to that drawn from the last.

For convenience of registration, the city of London is divided into thirty districts; and each of these includes one or more sub-districts. In the year 1841, each of the registrars of these sub-districts had a series of questions laid before him as to the sanitary condition of his sub-district. One of these questions was as to the character of the population in respect to temperance. I have endeavoured to take advantage of their replies to

assist in determining the question we are discussing. In some districts, the replies were indefinite; and I have consequently rejected them. The following table gives the annual deaths from phthisis per hundred inhabitants in each district where the replies to the above question were definite:—

	Temp.	Intemp.		Temp.	Intemp.
Kensington		.363	Whitechapel	.452	
Westminster		.384	Stepney		.373
Marylebone		.336	St. Olave		.594
Pancras	.323		Bermondsey		.427
Islington	.307		Newington		.386
Hackney	.306		Lambeth	.341	
Strand	.389		Camberwell	.304	
City of London	.355		Rotherhithe		.462
Shoreditch	.304		Greenwich	.482	
Bethnal Green		.230			
			Average,	.356	.395

The character of the population, its density and favourableness of locality, are pretty equally distributed, and could have had no great influence in causing this result. The general hygienic condition of the population of each of these sections can be judged of with considerable accuracy by the prevalence of typhus fever. The deaths from this disease in the temperate districts were at the same time .098 per cent. of the population; in the intemperate districts, only .083 per cent. Showing that, with the exception of this one habit, the latter class were more favourably situated as to health. And yet, in spite of this fact, the deaths from phthisis were most numerous in the intemperate districts. It is difficult not to believe that this preponderance was due, in part at least, to indulgence in the use of alcohol.

It is obvious that all these tables contain numerous chances for errors; and the dependence that is to be placed on them is only as indicating, in a very general way, the effects of alcohol. They are only introduced for the purpose of showing that the use of alcohol cannot have that very active prophylactic influence that is often attributed to it, so active that few persons who are in the habit of using it ever fall victims to consumption. That this opinion, in its full extent, is an error, the tables already given fully show.

c. Some important inductions can be drawn from a comparison of the two sexes, the degree to which they are addicted to the use of intoxicating liquors, and the proportion of deaths from phthisis among them. It will be gainsaid by no one that men are much more addicted to the use of these agents than women. In England, in 1848, 662 men and 135 women died of intemperance. The same ratio probably obtains in this country. During the same year, the deaths from phthisis were

Males	24,435
Females	27,227

The proportion of deaths among the females would be diminished considerably, if allowance were made for their composing more than half the population. Still, however, the popular opinion that females are more liable to the disease than males is true. The figures show, then, that the males are more addicted to intemperance, and least prone to phthisis. But do these facts stand in the relation of cause and effect? I believe most decidedly that they do not, but, on the contrary, that this preponderance of deaths from tubercular consumption can be shown to depend upon other

causes, and that, when these causes are eliminated, the greater intemperance of the males will be found to be accompanied by a greater liability to tubercular deposit, and that, too, especially in that time of life when there is the most marked difference between the sexes in proneness to the free use of alcohol.

Females are almost universally placed under worse hygienic influences than males. The in-door life they lead, their more sedentary occupations, the more vitiated air they breathe, their bad fashion of dress, and the smaller wages they receive, might well reverse the proportions of phthisis in the sexes if it were possible to express them in a numerical form. If, then, it can be shown that a single cause not enumerated above is more than sufficient to account for the excess of phthisis among the females, it seems to the writer a fair conclusion that the greater proclivity of the males to the use of alcoholic liquors is more than enough to counterbalance the anti-hygienic influence of all the causes indicated above, so far as the production of tuberculosis is concerned. This cause I believe to exist in menstruation and child-bearing, as the following facts conclusively show. Up to nearly the age of puberty, when the habits of the sexes are so nearly the same that we may consider the above causes of tuberculosis entirely wanting, the deaths from phthisis are nearly equal in both. At this period, neither menstruation nor the use of alcohol can have any influence. On the approach of menstruation, the deaths among the females increase with singular rapidity up to between 20 and 30 years, the period of greatest activity in the female reproductive system. At this time, five women die of phthisis to every three men. This ratio gradually diminishes during the next decade, as the uterine system becomes less and less the pivot upon which the health of women turns, till finally, at about 43 or 44 years of age, the ratio of deaths from this disease again becomes equal to that among the males. For a few years afterwards, the same process goes on; but it ceases at about the age of 50, and afterwards remains stationary. Now, this is precisely the age at which the reproductive function of women ceases. These facts are so striking and so regular in all mortuary statistics that it is impossible not to agree with the conclusions I would draw. In England,[1] in 1848, the deaths from phthisis in persons over 45 years of age were as follows:—

Males	5014
Females	5521

This disproportion would be still further increased if allowance were made for the greater number of females living at that age. From these figures we must conclude, that were it not for menstruation and its accompaniments more males would die of phthisis than females, notwithstanding the many unfavourable influences that the latter have to contend against. We might, indeed, expect 11 males to die for every 10 females—the ratio occurring above 45 years of age. To what is this fact due? It cannot be that the male constitution is more predisposed to the disease, for they are less disposed to disease of almost every kind, and in childhood there is very little difference in regard to phthisis. It cannot be the different habits of life of the sexes, for these all favour the males, and they are as strongly marked after 45 years of age as before. There is only left the fact that men are six times as much given to intemperance as women.

[1] In Bavaria, where the habits of the sexes are much more similar than in England or this country, as they assist in agriculture and other out-door employments, there died in seven years of phthisis 58,900 males, and 57,700 females, of all ages.

I have supposed above that the effects of the various anti-hygienic influences to which women are peculiarly exposed could not be represented in a numerical form. But this *can* be done, approximately at least, for it is in the country alone that these habits bear with peculiar force upon the female sex. In cities the habits and occupations of the sexes are more on an equality. But even here the advantage is, to some extent, with the males. Yet in spite of the unfavourable influence of menstruation and child-bearing more males than females die of phthisis in almost every city, year after year, when the preponderance of female population is especially great. In London there died of this disease

1838.		1854.	
Males . . .	4,057	Males . . .	3,914
Females . .	3,630	Females . .	3,340

and the proportions were nearly the same in every intervening year. The same fact is true in nearly every other large city of England. In New York there died of this disease—

1853.		1854.	
Males . . .	1,397	Males . . .	1,538
Females . .	1,342	Females . .	1,494

There must be some influence at work upon the males more than sufficient to counterbalance the evil effects of menstruation and bad hygienic influences taken separately, and nearly sufficient to neutralize both taken together. If we compare the males and females above 45 years of age, and living in cities, we shall eliminate both these influences to a great extent. Accordingly, under these circumstances, we find in London, in 1854, dying of this disease—

Males	1,010
Females	620

Or five males to every three females—exactly the reverse of the most unfavourable circumstances under which the females are placed.

I would not be understood to attribute *all* this difference to the use of alcohol, for other facts do not show so great an influence from that agent. But I believe it will appear, further on, that a part of it may, with truth, be held to result from bad habits in this respect.

d. People pursuing different occupations, from various reasons, are more or less given to the habit of using alcoholic liquors. The proportion of deaths from phthisis among these various pursuits, although obviously incapable of furnishing the data for an accurate determination of the question, will afford us probabilities sufficiently strong to corroborate or invalidate the conclusions already drawn from the facts previously presented. Lombard, in the *Annales d'Hygiène*, has given an extended table showing the effects of trades and occupations upon the frequency of phthisis. From this table I have selected, at random, some occupations under favourable hygienic influences, some of which are especially given to intemperance, while others are generally temperate. They occurred in the hospitals of Hamburg. There were admitted—

	Of all diseases.	Of phthisis.		Of all diseases.	Of phthisis.
Soldiers, Carpenters, Labourers	153	41	Copyists, Merchants, Instructors, Students	14	2

The first of these divisions is composed of occupations, the members of which are generally intemperate; or at least they are much more so than the latter. In the first class 27 per cent. of the cases admitted were of phthisis; in the second, only 14 per cent.

Some other occupations, peculiarly disposed to intemperance, presented a still greater ratio of cases of phthisis. An instance of this is seen in the case of the vagrant musicians, who exhibited the largest ratio of cases of phthisis. They are at the same time, perhaps, more prone to intemperance than any other occupation.

The same results appear in the report of the registrar of Paris for 1852. The following occupations were taken from this report, at random, in the same manner as those above. The figures represent the deaths from phthisis out of each thousand persons exercising those professions, during the year in which the report was made. A much more striking case might easily have been made out; but these occupations were selected in each case without knowing what the result was going to be:—

Soldiers Innkeepers Liquor-dealers	. . 4.04	Artists Advocates Instructors	. . . 3.07

Here, again, we have the same result though in a less striking degree—probably because the members were greater. Those professions inclined to intemperance are especially prone to phthisis.

Dr. Neufville (*Boudin's Statistique Méd.*), in a similar table, says, that in Frankfort-on-Mayne during a period of eight years, among—

Magistrates and Lawyers	6.8	per cent.	of the	deaths	were from phthisis.
Tailors	39.9	"	"	"	"
Shoemakers	36.4	"	"	"	"
Carpenters	35.9	"	"	"	"

The same result appears here still more strongly. It is difficult to find among the various statistics upon this subject, a single profession, the members of which are sufficiently numerous to prevent liability to a chance result, in which there is a large ratio of deaths from consumption, without that profession being especially addicted to the use of alcoholic liquors. Thackrah, in his work on "the effect of trades and professions upon health," says of almost every one, in which the number of deaths from phthisis is large, that it is also given to intemperance.

But there are a few occupations, the members of which are known to be peculiarly intemperate. An instance of this occurs in soldiers; these, in countries where enlistment is voluntary, are, almost to a man, addicted to the immoderate use of alcohol. They are, at the same time, more favourably situated as to hygiene than the bulk of the population; their food is abundant and of good quality, their clothing is good, they are neither sedentary in occupation nor overworked, nor exposed to vicissitudes of weather (except in actual service). Yet in spite of all these favourable influences they are more liable to consumption than the population at large among whom they reside. According to Tulloch (statistical returns of the British army), those in England afford twice as large a proportion of deaths from tubercular disease as the males of the same age who are not in the army. The same author, however, says, that in some parts of India, where the soldiers are particularly intemperate, the deaths from phthisis among the European troops are only about one-fifth as great as the general average in England. He draws the inference that intemperance may be con-

nected with an exemption from phthisis. It would hardly appear to be a just one, however, even from his own figures; for the deaths from this disease among the Sepoys, who are remarkably temperate, are still less numerous than among the Europeans. In other parts of India, too, where, probably, the same degree of intemperance prevails, the deaths rise to about the general average of England, showing that the freedom from the complaint is due to other causes (probably the climate). In these latter situations the native troops present a less mortality than the Europeans. In connection with this theory of Tulloch, is the fact that in some of the West India Islands, where the facilities for intemperance are quite as great as in India, the deaths from phthisis are more numerous than in any other division of the army, amounting in Barbadoes to 15 annually in each thousand soldiers. These differences are unquestionably more due to climate than to any difference in addictedness to intemperance.[1]

Among other occupations notoriously addicted to intemperance are victuallers, pot-boys, and brewers' draymen. Dr. Guy (*Journal of London Statistical Society*) has given the proportion of deaths from phthisis among persons engaged in these occupations.

Neither of these kinds of business is peculiarly unhealthy, yet out of 25 cases of all diseases occurring among pot-boys, 8 were cases of phthisis—a proportion nearly twice as great as obtains among other patients in the same hospital. A greater proportion of victuallers than of tradesmen generally, and of brewers' draymen, than of other labourers, died of the same disease, and also at an earlier age.

These proportions must be considerably increased when we take into consideration the fact that intemperance is also a cause of many other diseases, and would thus diminish relatively the *proportionate* number of cases of phthisis as compared with the total of deaths from all diseases. The following table, although alone of no great value, tends to corroborate the deductions of Dr. Guy. It is extracted from the reports of the Registrar-General of England, and shows the relative number of deaths from *all diseases* among innkeepers and beer shop keepers, compared with grocers, at different periods of life, among an equal number of each:—

	Grocers.	Innkeepers, &c.		Grocers.	Innkeepers, &c.
25 to 35 . .	100	181	55 to 65 . .	100	170
35 to 45 . .	100	196	65 to 75 . .	100	164
45 to 55 . .	100	179	75	100	145

Here the excess of deaths among the latter class is most marked at that period of life when the greatest number of persons die of phthisis. The same table also shows, approximately, how much allowance should be made in the facts presented by Dr. Guy, for the greater mortality among those occupations especially addicted to intemperance.

Somewhat analogous to the difference of occupation is difference of race. It has been the custom to attribute the large proportion of deaths from phthisis among the negro population of our northern cities to an unfavourable climate. May it not be that a part of it, at least, is due to their greater proclivity to intemperance?

It is a well-known fact that the lower orders are much more obnoxious to tubercular disease than the upper. Thus in Geneva, according to Lebert,

[1] Sweet (*Diseases of the Chest*) suggests that the freedom from phthisis in India may be due to the effects of the climate upon the liver, an organ believed to be, to some extent, vicarious in function with the lungs.

among the wealthy, 6.8 per cent. of the deaths were from those diseases, while it rose to 23.3 per cent. among the poorer classes. This difference, much greater than is commonly supposed to exist, could hardly be, unless a variety of causes concurred to produce it. It has been customary to attribute it to poor diet, vitiated air, the influence of certain occupations, &c. May it not be that the use of alcohol also has its influence in producing the result? The lower classes are certainly much more addicted to its use, and, in an agent so potent, it is, at least, a suspicious fact that those who use it most largely are most liable to tubercular deposit. At any rate so decided a difference in proneness to these diseases could hardly exist, if the use of alcohol had any very decided influence in preventing them.

Another class analogously situated, but, per force, particularly temperate, is to be found in the denizens of prisons.

Ancell (*On Tuberculosis*) has collected from the records of various prisons in England and this country, the causes of death among 76,000 prisoners. Of 1,872 deaths among these persons, 645 were of tubercular diseases.

This is certainly a very large proportion of deaths from such diseases, if they be compared with the mortuary statistics of society at large. But prisoners are composed of a peculiar class of individuals. A very large proportion of them are males, and almost the entire body are between 20 and 60 years of age. It is accordingly with people under these circumstances that they should be compared, in order to arrive at anything like an accurate determination of the effects of the discipline and confinement of a prison. The deaths among the above prisoners from tuberculosis were 34 per cent. of the whole. In England, in 1847, there died 116,000 males between the ages of 20 and 60 years. Of these, 36,600 were of tubercular diseases. This is about 32 per cent., a trifle less than occurred in the prisons. The ages of the prisoners is not given, but it is probable that a larger proportion of them were young men than in society at large. Some of them, also, were women. Both these circumstances would tend to increase the relative proportion of deaths from tuberculosis in comparison with the community in which they lived. It is certain then that there is no especial proneness among prisoners to tubercular diseases, so far as these statistics go; it appears to me that the tendency is rather the other way. No account is here taken of the effects of the various concomitants of prison discipline, the sedentary life necessarily led, the solitary confinement and deprivation of light, and, above all, that depression of spirits inseparable from such a position. All these must have an influence in the production of tubercular disease. There is still another cause which would tend to give a larger ratio of tuberculosis among prisoners than really exists. The deaths from other diseases would be diminished by the abstraction of alcohol, and thus present a *relatively* larger number from tuberculosis, unless these latter were diminished in the same ratio. If then, under all these adverse circumstances, the deaths from tuberculosis are not more numerous than among other individuals, we must conclude that there are some saving circumstances in prison life. It is difficult to imagine the existence of any unless it be the forced temperance existing there.

e. The statistics upon which those who have expressed the belief that alcohol is a prophylactic against phthisis, have principally depended for the support of their opinion, have generally been a comparison of the deaths from this disease among individuals known to have been intemperate with those occurring in society at large.

This mode is free from most of the causes which have given so much uncertainty to the statistics already brought forward. It is, perhaps, as free from uncertainty as any that can be adopted; and opinions founded on such facts, and adopted and presented by men of reputation in the profession, certainly deserve the most careful consideration. At first view, such a method might appear to be entirely free from any doubts or uncertainties. I believe, however, that there is one circumstance, overlooked by those who have presented such statistics, that casts a shade of doubt upon the entire accuracy of conclusions drawn from these data.

Dr. J. B. S. Jackson, in the *New England Quarterly Journal of Medicine and Surgery*, has given the results of the autopsies of 35 persons known to have been intemperate, "many of them grossly so." In these he found tubercles in the lungs in five instances, although only two of them died of phthisis. He concludes, from this, that such persons are less likely to die of that disease than others. Is this conclusion a just one so far as these figures go? How do they compare with those presented by the statistics of the society at large, in which these cases occurred? It is not likely that any of the autopsies performed by Dr. J. were upon persons under 20 years of age, as intemperance below that period is rare. We shall also, perhaps, not be far from the truth in supposing them all to have been males. I am unable to present the proportionate number of cases of deaths from phthisis among these classes of persons in Boston for the purpose of comparison; but they cannot differ materially from those in New York.

In this latter city there died, in the year 1854, 5,683 males, of 20 years and upwards, from *all* diseases; of these, 1,254 died of phthisis. To these a certain number should be added for those who died of other diseases, while affected with tubercles in the lungs, if we would obtain the number of those whom an autopsy would have proved to be tuberculous. (It is evidently with such that Dr. Jackson's cases should be compared.) The following observations of Louis (on phthisis) may be taken as representing the number that should be added for this reason: of 358 persons dying in the wards of Chomel, he found 123 to have *died* of phthisis, and 40 others to have *presented tubercles in the lungs*, but to have *died* of other diseases. We may conclude then that an autopsy would have revealed tubercles in the lungs of 1,662 persons out of the 5,683 spoken of above. The cases of Dr. Jackson give a percentage of 14.3 cases of consumption, while those of New York are 29 per cent., taking the temperate and intemperate together. The comparison, thus far, certainly bears out the conclusions of Dr. J. The number of cases, however, is small—perhaps so small as not to be of any great value, unless corroborated by other facts. Neither is it stated whether the cases occurred in hospital or private practice; this must be an important item in drawing conclusions from such data.

The proportion of consumptives who die in our hospitals is smaller, usually, than that in the community at large. Either such chronic cases are discouraged from entering the hospital, or those who know themselves to be sufferers from this disease prefer to pass the short portion of life that remains to them among their friends. It is certain that the proportion of deaths from consumption in hospitals is much less than out of them. Another important correction is to be applied to these and similar cases before they can be held to indicate the degree to which the intemperate are prone to tubercular disease. This is, the fact that the grossly intemperate are short lived. They not only have their own peculiar diseases, but are also much more subject to many others than the temperate. May it not be the

case, then, that, in the statistics of Dr. Jackson, the number of those dying of *other* diseases than phthisis was increased very largely, while the number of those affected by the latter remained stationary, or even increased also, but in a less degree?

(I believe this source of error has been often overlooked in these comparisons, as it evidently was in the article under consideration. It is not unlikely that this comparison of deaths from phthisis with the entire mortality of the intemperate, in the loose way that the non-professional public is accustomed to reason on medical subjects, may have assisted in giving origin to the popular prejudice as to the antagonism of alcohol to this affection; for among such persons, whether the opinion be true or not, it cannot be regarded otherwise than as a prejudice.)

If the intemperate lived only half as long as people generally of their own age, it is obvious that they would be exposed to the danger of contracting a deposit of tubercle for only half as long a period; and consequently, in a given number of deaths among such individuals, we ought to expect to find only half as many cases of phthisis (provided all ages were equally subject to that disease). If we suppose that the intemperate live only half as long as others, the cases which we are discussing would appear to present almost exactly the same ratio of deaths from phthisis as society at large. But it is highly probable that those who are intemperate, "and many of them grossly so," do NOT live half as long as others. The facts which I depend on to elucidate and prove this important point are contained in the "Report of the London Statistical Society" for 1851, in a paper by Mr. Neison, the actuary of a London insurance company. According to this author, the expectation of life among the intemperate (and he seems to give this word nearly the same signification as Dr. Jackson) is to the general average as 1 to 3.24. This is a result for which my readers will probably be as little prepared as I was myself. It was not arrived at, however, with reference to the question we are at present discussing, and is all the more valuable on that account. The source from which it emanates, too, and the large number of cases from which it is deduced (357), leave no room to question its substantial accuracy. But, singularly enough, the very facts presented by Dr. Jackson furnish us the means of corroborating the results arrived at by Mr. Neison. This will be seen from the following comparison:—

Dr. Jackson presents us with two *deaths* from phthisis, and three deaths from other diseases in patients already labouring under the former. As already stated, Louis, in a number of individuals, of whom one hundred and twenty-three died of phthisis, found forty others dying of *other* diseases while phthisical. In Louis's table, these cases are as 1 to 3 of the whole; in Dr. Jackson's, they are as 5 to 3. It would thus appear that the mortality was nearly five times as great in a given period (the length of time which phthisis lasts) among the intemperate reported by Dr. Jackson, as among those at large, reported by Louis. This must certainly be the case, unless we suppose that those diseases, and that state of the system brought on by the use of alcohol, particularly predispose to phthisis, an alternative that those who believe in the prophylactic power of that agent will hardly prefer to accept. The similarity of the ratio given by Mr. Neison, and that drawn from the statistics of Dr. Jackson, tend strongly to prove its correctness.

The application of these facts to the preceding is easy, and will show a result widely different from the conclusions which would be drawn, at first

view, from the statistics of the autopsies made by Dr. Jackson. Thus, out of a number of persons sufficiently great to furnish annually, if they were intemperate, thirty-five deaths from all diseases, of which five would present tubercles in the lungs, we should have, if they were temperate, only eleven deaths from all diseases, of which only 2.6 would present tubercles in the lungs. Thus it will be seen that these cases, which were supposed to furnish an argument for using alcohol to prevent phthisis, show, so far as we can depend on so small a number of observations, a directly contrary conclusion, the number of deaths from that disease being nearly twice as great among the intemperate as among individuals generally; although, when compared with the total mortality of each class, there is a relative diminution in about the same ratio.

Dr. Peters, of New York, in the *New York Medical Journal* for 1844, has given the results of the autopsies of "nearly seventy" persons dying suddenly, or found dead in the streets, "who were intemperate." In these, he did not meet with a single instance of tubercular abscess in the lungs. A small number of chalky tubercles were frequently found, and also a number of cicatrices, surrounded by scattered tubercles. These last facts would seem to imply, from the manner in which they are stated, although it is not directly so said, that the author of the paper believed them to have been cured, or to be in the process of cure, from the use of alcohol.

These facts, though related throughout in a loose and inaccurate manner, deserve a careful examination, as they are one of the few instances where the author does not indulge in theory, and seems to have none to sustain. There seems to be some doubt, however, as to whether all of them were really cases of intemperate persons. They were, many of them, instances of persons found dead in the streets. In these cases, it would seem to be difficult to substantiate the fact of intemperance with certainty. But, allowing this to have been the case with *all* of them, what are the conclusions which can legitimately be drawn from them? Certainly not that tubercular abscesses never occur in persons of intemperate habits. Within a few hours of the time of writing this, I have seen a case of extensive tubercular abscess, in both lungs, in a man who has not only been habitually intemperate for many years, but has continued in the habit up to the present time. Neither do I believe that the observations are numerous enough to enable us to come to *any* conclusion with certainty, for the following reasons: A large proportion of these cases must have been men; and, for the purposes of comparison, we shall probably not greatly err in supposing them all to have been so. As they died suddenly, there could have been no opportunity for the deposition of tubercle during their illness. Also from the nature of phthisis, deaths do not occur suddenly, or in the streets, from it.

There is no reason, then, for supposing that more cases of tubercle would be found among these seventy than among the same number of persons taken at random in the streets, if we took them of the same age (probably none of these were below 20 years of age), unless, as Dr. Peters seems to suppose, intemperance is a prophylactic against consumption. It is a matter somewhat difficult to determine how many cases of tubercular abscess we should find in seventy persons in society at large. But it may be done with an approximation to certainty. In New York, where the observations of Dr. Peters were made, there died, in the year 1854, 1254 males, of 20 years of age and upwards, of phthisis. At the same time, there were living in the city, approximately, 169,000 such persons, taking the entire population of the city, at that period, at 600,000, a number which must have been

very near the truth, and supposing them to be divided, as to age, as they were in 1850. This would give one death annually to one hundred and thirty-five such persons. The observations of Louis, the most accurate that have ever been made on the subject, show that the average duration of the disease is about twenty-one months. This would give one person *sick* of phthisis to about seventy-seven living. This result supposes that all the cases of the disease terminate fatally, a result far from the truth. With this source of error, however, enough has been said to show the fallacy of the conclusion arrived at by the author of the essay, even if the looseness with which the facts are related did not deprive them of most of their value. The duration of phthisis, however, is short, after the formation of abscesses. Probably five months would be quite as long, or longer, than the average duration of life under such circumstances. If this is allowed to be a fair representation, we should expect to find only one case of tubercular abscess among three hundred and twenty-three persons taken at random. The chances then would be more than 4 to 1 that among seventy persons we should find no case of abscess in the lungs. But individuals so far advanced in phthisis would hardly be much out of doors; neither would they be likely to continue in habits of gross intemperance to such an extent as to die in the streets. I believe it to be common to the observation of all that those who are sick to such a degree, know too well the evil effects of intemperance in general, to continue in the habit of it. Of thirty patients at the Eastern Dispensary in New York, who had been in habits of intemperance up to the time of commencement of the disease, only twelve continued the habit to the same degree as before. Of the others, eleven ceased using alcohol partially, and seven totally.

In consideration of these facts, I believe no one will conclude that the observations of Dr. Peters favour the theory that the intemperate are less liable to phthisis than others. The number of cases in which there were cicatrices, or other appearances indicative of a tendency towards health, is not given. Such appearances, at the time the paper was written, might very properly have been considered as extraordinary. But, at present, the observations of pathologists have shown them to be common. The following table, from Ancell on Tuberculosis, shows that they are "frequently found:"—

In 100 autopsies,		Rogée	found	them	.	.	.	.	51	times.
" 116	"	Boudet	"	"	.	.	.	.	61	"
" 73	"	Bennet	"	"	.	.	.	.	16	"
" 160	"	Beau	"	"	.	.	.	.	157	"
449									285	

These were deaths from other diseases than phthisis. They show that, if such appearances are to be taken as indicative of pre-existing phthisis, the disease much more frequently ends in recovery than is supposed, and that we are not justified in supposing with Dr. Peters that his cases were in process of cure from the use of alcohol.

The following facts are given by Mr. Neison, the actuary of a London insurance company, in the *Journal of the London Statistical Society*, in attempt to determine the comparative length of life of the temperate and intemperate. His conclusions upon this point have been given previously.

The diseases of which the three hundred and fifty-seven intemperate persons died, upon which his calculations are founded, are also given. Of these, forty died of phthisis (and three others of hæmoptysis, who should probably be classed with them).

These cases were reported to him by various physicians, and therefore represent, probably, with considerable accuracy, the diseases of which they really died. But the effects of their intemperance were such that only one hundred and ten temperate persons would have died in the same time out of a population sufficient to have furnished three hundred and fifty seven, had they been intemperate. And a population sufficiently large to have given forty deaths from phthisis in a given time, supposing them intemperate, would furnish only twenty-one if they were temperate.

This last calculation is based upon the supposition that all the three hundred and fifty-seven were above 20 years of age (which was the fact with four or five exceptions), and the fact that in England, in 1848, 214,000 persons died above 20 years of age, and that of these 40,000 were phthsical; that is, 214,000 : 40,000 :: 110 : 21.

There are several circumstances, however, in connection with these facts, which give a degree of uncertainty to this strongly-marked result. The intemperate are exposed to many of the recognized causes of phthisis. Some of these are their greater exposure, their less amount of earnings, and consequently poorer food and clothing, and the vitiated air they so frequently live in.

But it would hardly seem possible that these circumstances should cause half the deaths among the intemperate, which must be the case to reduce 40 to 21. On the other hand, mention will be made further on of a fact which will, perhaps, neutralize the effects of these anti-hygienic influences.

A method of determining the influence of alcohol, which would, perhaps, be as free from elements of uncertainty as any which can be attained to, I have endeavoured to present in the following statistics. In the compilation of them, I have tried to avoid mistake by excluding every case which seemed to present any uncertainty. Although no autopsies were made in the cases of death, the cause can hardly be considered as doubtful; as, however difficult the diagnosis of consumption may be in its earlier stages, it can present but little difficulty in the later.

In a small country town near the centre of New England, presenting no peculiarities of soil, climate, or other natural causes to make it differ in health from the surrounding country, I have been well acquainted for the last seventeen years. The inhabitants are almost exclusively engaged in agriculture, and are well fed, well clothed, and housed, almost without exception.

Temperance, however, has not been so popular as is generally the case in that part of the country. Of the males living within its limit during the period above indicated, above 20 years of age, 114 were intemperate and 50 temperate (using the word in the sense I have previously done); that is, considering as intemperate all those who made a daily or habitual use of intoxicating liquors. Many of these were decidedly intemperate in the usual acceptation of the term.

The form of liquor most largely used was cider, but stronger ones were by no means sparingly employed. Of those classed as temperate, most did not drink at all, while others did occasionally. Of the former, during the period indicated, 19 died of phthisis; of the latter, only 6. If the proportion had been the same with both classes we should have had 8 of the latter instead of 6. If the former class had been as healthy as the latter, there should have died, of this disease, only 14 instead of 19. Reducing them both to a decimal form, 12 per cent. of the temperate and 16.5 per cent. of the intemperate died of this disease during the period.

This result could hardly depend upon any cause but that to which it is attributed, as both classes were engaged in the same out-door occupations, and both were supplied in equal abundance with all the necessaries of life. The only apparent chance of error is in the smallness of the numbers. If, in the examination of the other sex, the same result occurs, the truth of the conclusion will be very strongly corroborated. The facts were as follows: Within the same limits, and during the same time, there were living 184 women above 20 years of age, the excess of females being caused principally by the greater emigration of males. They were all engaged in active occupations, the uniformity in this respect being even greater than among the males. But their habits as to the use of intoxicating drinks were strikingly different. Only 17 of them were intemperate, in the sense in which the word is used above, while 167 were temperate. Of the former, 3 died of phthisis; of the latter, 25. Reduced to a decimal form 18 per cent. of the intemperate and 15 per cent. of the temperate died of this disease. These results are again in favour of the temperate. The statistics of both sexes not only point to the same conclusion, but they do it with a remarkable similarity; the difference being 4.5 per cent. among the males, and 3 per cent. among the females. This coincidence, under the difference of constitution, dress, occupation, &c., of the sexes is quite striking and cannot but be regarded as strongly indicating the correctness of the conclusions arrived at. These two series of facts may be advantageously united into one view in the following manner:—

	Temperate.	Intemperate.	Deaths from phthisis among Temperate.	Intemperate.
Males	50	114	6	19
Females	167	17	25	3
Total	217	131	31	22

	Per cent of deaths among Temperate.	Intemperate.
Males	12.	16.5
Females	15.	18.
Total	13.5	17 25

There is another way in which these tables may be compared, which will be of advantage in illustrating the subject.

The degree of intemperance among the sexes in general is about as 6 to 1 in favour of the females.[1] In the town from which these data were drawn it was about as 20 to 1 in their favour. The most extensive tables show that about 10 females die of consumption to every 9 males, when the latter drink six times as much as the former. Now, when they drink twenty times as much, they ought to be still more exempt, if the use of alcohol is prophylactic in its effects as to this disease (unless we suppose that the common average of intemperance is the golden mean, to vary from which in either direction would be prejudicial). In this town, where this ratio between the sexes in regard to the use of alcohol is so different from usual, the deaths from phthisis are nearly equal in the sexes in proportion to their numbers. The inference, then, from these facts would seem to be that the use of alcohol is prejudicial, and more so when used by men than by women. May it not be that this latter fact is to be accounted for by the greater extent to which its use is carried by the men individually, as this was certainly the case in the place of which I am speaking. These statistics are

[1] This is the proportion in England; it is, probably, the same nearly in this country.

almost entirely free from those disturbing causes which give a greater or less degree of uncertainty to nearly all the other tables presented. Indeed, it is the only kind of comparison which can determine the question with accuracy. A more extended series of facts of the same kind would forever set the question at rest. Yet theory is ever so fascinating that, on this important question, none have been before given to the public.

The facts which I am about to present were obtained at the Eastern Dispensary, in New York, among a class of patients who are largely addicted to the use of alcoholic liquors. They are analogous to those last given. I questioned 67 patients affected with phthisis, in the order in which they chanced to present themselves for treatment. Of these, I found that 36 had been accustomed to the regular use of alcohol, while 31 were habitually temperate. In order to obtain a standard by which to determine whether a greater or less proportion of these phthisical patients were intemperate than obtains among the class of people in general, who resort to such institutions for medical treatment, I questioned an equal number of other patients affected by diseases not supposed to be at all influenced by the use of alcohol (principally pleurisy, bronchitis, rheumatism, and diseases of the heart). These were also taken in the order they presented themselves, and were divided as to sex precisely as the former. Of these latter 25 were temperate and 42 intemperate. Both of these series of cases may be advantageously presented in a tabular form in the following manner, separating the sexes:—

MALES.			FEMALES.		
	With phthisis.	With other diseases.		With phthisis.	With other diseases.
Temperate . .	6	13	Temperate . .	25	29
Intemperate . .	25	18	Intemperate .	11	7

Here it will be seen that the statistics of each sex give the same result, and in a degree nearly the same. The males, however, were somewhat more unfavourably affected by the use of alcohol than the females (a result arrived at in one or two instances before, and which I attribute to the greater extent to which they use alcohol). The fact that the statistics of both sexes point in the same direction cannot but be regarded as strengthening the probability of their correctness. I have no doubt as to the general accuracy of the accounts given by the patients as to their habits in regard to the use of alcohol. But any attempt at deception on their part would be as likely to occur among those affected by other diseases as by phthisis; so that in a comparison of results like that above, the errors in this respect, if any existed, would probably neutralize each other.

g. In persons addicted to any habit which we suspect to favour the production of tubercles in the lungs, we should expect the disease to occur at an earlier age than those under more favourable circumstances. The converse of this also we should expect to be true; that if they were attacked later in life the habit must be prophylactic in its effects. This method of determining the question under discussion I attempted to apply to the patients at the Eastern Dispensary, mentioned in the last section. The average age of the temperate who were sick with phthisis was 34.1 years; the average age of the intemperate 40.1 years. The following table presents the same facts, separating the sexes:—

	Temperate.	Intemperate.
Males	34.	40.8
Females	34.2	38.3
Average of both	34.1	40.1

This is a result that I did not expect would occur, for its indications are directly the opposite of most of the facts already adduced. The average age of the temperate was six years less than that of the intemperate, and nearly the same result is indicated by a separate examination of each sex. Several circumstances are to be taken into account in determining the correctness of this result. Most of these patients were of Irish nativity, and consequently were not very sure as to their exact age, usually understating it somewhat. Another, is the fact that persons of a naturally feeble constitution are less apt to fall into habits of intemperance than those of an opposite physical make. We should naturally expect the former to be attacked with the disease at an earlier age than those of a more robust form. Another still is, that many persons fall into habits of intoxication after the period at which phthisis is most apt to occur, while very few who are intemperate in their youth cease the use of alcohol in after-life. In other words, there is a *greater* proportion of intemperate persons at that period of life when the proclivity to phthisis is *least*, and *vice versâ*. It is difficult, if not impossible, to determine the exact degree to which these facts would affect the above table. It is certain, however, that they would considerably reduce its value as indicating the prophylactic virtues of alcohol in phthisis, and it is not improbable that they might entirely reverse the conclusions to be drawn from it.

There is one circumstance which, I believe, will affect somewhat all the statistics presented in connection with this division of the subject (the effects of alcohol on those predisposed to phthisis). The observation of all will, probably, bear me out in the opinion that those who have naturally a vigourous constitution, broad shoulders, well-developed muscular system, and strong digestive powers, if they have not a stronger appetite for alcoholic liquors than those of an opposite physical conformation, at least indulge in them more freely. Those who are naturally of a feeble constitution, or in a low state of health, or inclined to pulmonary disease, would be more likely to abstain from them, from prudential motives, if not from a natural aversion to their stimulus.

The same fact shows itself in a comparison of the sexes; females, with a naturally less robust health (and probably a stronger proclivity to phthisis), being less inclined to the use of intoxicating agents than the other sex. Of course, the habit is formed, in all cases, after the constitution is established. In all the previous instances, if this opinion be true, temperance will appear less favourable to health than it really is, so far as this disease is concerned. But I prefer not to leave a question of this importance to a vague impression, however strong or common it may be, when it is possible to substantiate it by facts.

In the town previously referred to, of one hundred and fourteen intemperate men, seventeen were of such a constitution and physical form, that they would be thought more predisposed to phthisis than others. Of fifty temperate persons, twelve presented the same feeble constitution.[1] This gives 15 per cent. of the intemperate, and 24 per cent. of the temperate. It should be borne in mind that this was not an acquired state from the use of alcohol, but was original. A difference so marked as this could hardly depend upon the small number of cases; while the fact, if such it be, shows the difficulty of arriving at the truth in such a question as that we are discussing. It also shows that statistics ought to point clearly and strongly

[1] In such a matter, the judgment, of course, has to be exercised as to the constitution of individuals; but I have endeavoured to exercise it without bias.

to a freedom from phthisis among the intemperate before it can be accepted as a determined fact. Not only has this not proved to be the case, but nearly all I have been able to collect, when freed from sources of error, point to an opposite conclusion. When this conclusion is strengthened by the considerations last presented, *it seems to me almost conclusive that the use of alcohol not only has no power to defend those predisposed to phthisis from its attacks, but would, with little doubt, change the predisposition into actual disease.*

In connection with this opinion, as to the prophylactic influence of alcohol in this disease, I cannot forbear saying a few words upon the moral aspects of the case. It is true that this is not the view proposed in the question for discussion. It is true, also, that the evil effects resulting from the habitual use of alcohol do not affect the fact of its influence upon this disease, whether that influence be favorable or not. In a purely scientific question this ought not to influence our opinion. But theories give origin to practice, and in this way have a bearing upon the well-being of the community. We ought therefore to demand a rigid proof of the truth of the theory before putting it in practice. When phthisis has actually commenced, it might, perhaps, be prudent to prescribe the use of alcohol with only a *probability* of advantage resulting from it. But with persons who are still in health, I believe the influence of such an agent as alcohol would be most *funeste*. The injury resulting from it would probably far outweigh any prophylactic power it could possibly possess. In this view of the case, I am happy in having arrived at the conclusion, uninfluenced, however, by moral considerations, that it has no virtues as a preventive of this much dreaded disease.

Concerning the second part of the question—the effects of the use of alcohol upon cases where tubercle has already been deposited—it might perhaps be considered sufficient to have shown that this agent probably favours the approaches of tuberculosis in the healthy, to argue that it could be of no very great benefit in those who are actually diseased. This inference would be very strong with all, except those blinded by Hahnemannic theories. If it should prove that the inference was not correct, it would certainly appear to be an argument in favour of that absurd system. But I believe it can be shown to be correct by actual observation of facts, which, if judiciously and fairly presented, are ever more convincing than mere deductions. That in such cases alcohol has no *marked* remedial value, I am as well convinced, from my observations, as I am of any fact in therapeutics. I am too much accustomed, every day, to seeing cases of phthisis, among the lower orders in this city, which have not only had their origin at the same time that intoxicating agents were being used regularly to excess, but have pursued their usual downward course to a fatal termination, notwithstanding the same habits were kept up, to have faith in their being able to cure such cases. These patients, often too unwilling to pursue the course recommended by physicians in other respects, frequently save us the trouble of experimenting with alcohol by obstinately adhering to its use, whether we will or no.

The following cases of phthisis presented themselves at the Eastern Dispensary of New York within a few weeks of each other. They are a part of those which have been already referred to. In all of them, this agent had been more or less largely used during the whole course of the disease. The duration of such cases is always difficult to be ascertained with accu-

racy. But such patients rarely present themselves till the disease is considerably advanced. Without doubt, all of them had been using alcohol long enough to have effected a cure, if it ever could be done by such a medicine. I here present the duration of these cases as nearly as it could be ascertained from the patients themselves, dating from the commencement of the cough :—

Sex.	Duration.	Sex.	Duration.
Male	2 months.	Female	2 months.
"	1 year.	"	4 months.
"	2 years.	"	2 years.
"	1 year.	"	8 months.
"	1 month.	"	6 months.
"	2½ years.		
"	2 years.		
"	2 years.		
"	1 year.		
"	5 years.		
"	6 months.		
"	15 months.		
"	2½ years.		
"	9 months.		

The duration of these cases is seen to vary from one month to five years, most of them being sufficiently long to have afforded the remedy ample scope for action,[1] if it has any. Yet, as they all presented themselves now for the first time, it may be inferred that they considered themselves worse than at any previous period. The physical signs varied from those of a slight and recent deposit of tubercle to those of extensive vomicæ. There was also a general, but not regular, concordance between the duration of the disease and the gravity of the lesions presented, those in whom the disease had existed longest presenting the most advanced stage. In none of these cases, according to the accounts of the patients themselves, was there any decided change for the better; but the disease had pursued its usual course, with temporary remissions in severity, as is customary.

In order to determine whether the disease is more or less rapid in these cases than in those where alcohol was not used, I present the following cases of that kind for comparison. They were collected at the same time and place as the others, and had either ceased using alcohol, on being taken sick, or had never used it at all.

Sex.	Duration.	Sex.	Duration
Male	5 months.	Female	2 years.
"	8 years.	"	6 months.
"	6 months.	"	24 months.
"	2 years.	"	12 months.
"	4 years.	"	2 years.
"	2 years.	"	10 years.
"	10 years.	"	12 months.
		"	2 years.
		"	4 months.
		"	15 months.
		"	10 months.
		"	15 months.
		"	5 years.

In persons of so low a degree of mental cultivation as those who usually present themselves at eleemosynary institutions of this kind, we could not expect their statements, as to the period of access of the disease, to be very

[1] Commencing, as the use of alcohol did, before the disease appeared.

accurate, unless it were very recent. That this is the case with both these tables might be inferred from an examination of them. With these facts in view, we should not place any great reliance upon the actual duration of the disease as given by the patients themselves. But it is not here the actual, but the comparative duration of the two classes that we are seeking; and in this comparison we shall, to a great degree, be freed from this source of error, as it is likely to be as great with one class as the other. It is true, too, that it is not the total duration of the disease we are comparing, but only that to a particular point, viz., that degree of sickness which induces a visit to the dispensary for relief. In so large a number of cases, we may suppose this point of the disease to be nearly the same in those composing each table. With these preliminaries to show that I do not consider the conclusions we shall arrive at perfectly unobjectionable, we will compare the two tables. The average duration of the disease, up to the time the intemperate presented themselves for treatment, was about sixteen months. Among those who did *not* use alcohol during the course of the disease it was 33.6 months. We thus see that the former had been sick only one-half as long as the latter when they deemed themselves sick enough to require treatment. After the former had been sick only sixteen months, they appeared, so far as I could judge, to have arrived at the same period of the disease as the latter at the end of thirty-three months. At any rate, I am very sure that few of them would have lived to make up the difference already existing in the duration of the disease. Louis (op. cit.) has shown that the average duration of the disease in Paris is about twenty-one months. The average duration of these cases had already been about twenty-five months, showing that the patients had over-stated the time they had been sick. There is no reason, however, why the intemperate should have been more accurate in this particular than the temperate. In these—far from living long enough to make up the difference between them and the temperate—I think few would have lived to make up the difference to Louis's average. On the other hand, the temperate, according to their own statement, had already lived a year beyond that period. We can hardly suppose them to have made so gross an error as this in the duration of their illness. On the whole, I think this must be considered as a strong argument in favour of the position that the use of alcohol is not only prejudicial to those predisposed to phthisis, but in a still greater degree to those already attacked by it. This is what we should suppose, *à priori*, would be the case.

It is difficult, indeed, to conceive how the case could be otherwise. For if tubercle has gained a foothold with greater ease, under the use of alcohol, all analogy would cause us to believe it would still exercise the same influence in extending the deposit of that substance, if it did not increase the rapidity with which it undergoes its usual changes. But suppose, for an instant, that the influence of alcohol were favourable on those predisposed to the disease, and, also, that its therapeutic effects were valuable. In a person continually using it, it is difficult to see how tubercle could gain any foothold. For then the remedy would be on the spot at the moment when the malady was commencing, and was, consequently, in the circumstances most favourable for cure. Yet cases of phthisis, under such circumstances, continually occur in the observation of every one; and, in those related in this essay, they occurred more often than among the temperate. Among the lower classes of this city the statistics already given show that more than half (36 against 31) use alcohol throughout the dis-

ease, probably to at least as great an extent as it would ever be recommended as a medicine. And this is more marked among the males, more than four-fifths using it. Yet the deaths from this disease here, among the males, are regularly more numerous than among the females. I should not, probably, overstate the facts if I said that of the 1,500 males dying of phthisis each year in New York, 1,000 were attacked with the disease in spite of the reputed prophylactic virtues of alcohol, and died of it in spite of its vaunted curative powers. How can it be called a *medicine* (for this disease) in the face of such facts?

In order to determine the effects of a regular and moderate use of alcohol upon those already the subjects of phthisis I have deemed it justifiable to have recourse to experiment, and accordingly I selected several cases from the Eastern Dispensary, in different stages of the complaint, in persons some of whom were still using alcohol in some form, according to custom, while others had given up its use, and others still, had never used it. The form of the medicine used in all these cases was *whiskey*, not only because it is more free from various deleterious and medicinal substances than most other forms of liquor, but, also, because it is that form which has been especially recommended in such cases. The doses varied from half an ounce to two ounces three times a day. In most of the cases it was the only medicine given during the time the cases were under treatment; in a few, some palliatives of particular symptoms were exhibited which could not have interfered with the result of the experiment. (I commenced with a much more numerous list of cases than I give here; those who have ever attempted such an experiment on such persons will easily imagine the reasons which reduced the number of my cases.)

These cases were under observation three months (except when otherwise stated), during the spring—a period when patients affected with this disease generally exhibit a temporary amelioration of symptoms—so that judging of the effects of a remedy exhibited during this season we should, probably, form opinions of its action, *at least as favourable* as truth would warrant.

As being one of the best means of forming a judgment of the effects of alcohol in this malady, and, at the same time one capable of arrangement into a statistical form without any opportunity for preconceived opinions of the observer to intrude themselves, I have chosen the weight of the patients taken at different periods. First, at the commencement of treatment, afterwards, in general, at periods of a month. These weights were taken with care upon the same scales, the patients having on the same clothing at each successive period. The physical signs are given at the commencement and termination of treatment from personal observation. The cough, diarrhœa, hectic, and any subjective symptoms, from the reports of the patients themselves. During the whole time of treatment they were placed under as favourable hygienic conditions as possible, and a diet recommended, consisting of as much fat meat as could be digested. No cod-liver oil was exhibited in any case, nor had any been taken for some time previously.

With these preliminaries, I give the cases as they stand upon my note-book; the observations being made in every instance upon the spot.

CASE No. 1.—A gunmaker, aged 40. Has always been a regular, but not excessive drinker. Two months ago he was attacked with severe hæmoptysis after a debauch, lasting several days. He was considerably reduced by this, and left off the use of alcohol till he took it by my recommendation. His physical signs were those of a moderate deposit of tubercle

in the upper half of the left lung, with commencing softening. (As this patient remained under treatment only a short time I shall give no further particulars.) He commenced taking whiskey, two ounces, three times a day, and the second day was attacked again by hæmoptysis, as after the debauch previously. The whiskey was stopped till this had ceased, after which it was renewed in a much smaller quantity. But symptoms of recurring hæmoptysis and disordered digestion induced the patient to refuse to continue its use further. He was accordingly put upon other treatment.

The recurrence of hæmoptysis in this case appears as though it was caused by the whiskey. It might be only a coincidence, but it could have no influence in restraining it, judging from this case.

CASE No. 2.—A hatter, aged 40 years. Had cough a year, and was emaciated somewhat. The physical signs are those of extensive deposits of tubercle in the tops of both lungs, with a small vomica in the left. He had hæmoptysis three months ago, and hectic and severe cough at the present time. He had always been an intemperate man, and still continues in the same habits. He took two ounces of whiskey three times a day, a quantity considerably less than he had been accustomed to.

Weight at commencement of treatment	146 lbs.
" " the end of 1 month	146 "
" " " 2 months	152 "

He had a poor appetite and digestion throughout the whole period of treatment. Hectic and night-sweats also continued, unaffected by the remedy. After using the whiskey a fortnight he had an attack of hæmoptysis. Cough rather improved and expectoration less. The physical signs were much the same, after two months' treatment, as before.

CASE No. 3.—A musician, aged 22 years. Hæmoptysis five months ago, with cough ever since. Had always been temperate. Physical signs of softening tubercles in top of left lung, with a commencing deposit in the right. Has night-sweats and severe cough. Digestion good. Prescribed whiskey, one ounce three times a day.

Weight at commencement of treatment	116 lbs.
" " the end of 1 month	113 "
" " " 2 months	114 "
" " " 3 "	112 "

Night-sweats continued without change during the whole treatment. Cough improved, according to the patient's account, at each visit. Appetite and digestion continued good. The physical signs at the end of three months showed nearly as extensive a deposit of tubercle in the right lung as in the left. They were also softening in the former.

CASE No. 4.—A labourer, aged 59 years. Always intemperate, and had continued in the habit up to the present time. Taken with cough a year ago. Never had hæmoptysis. Tubercles in the tops of both lungs, principally in the left, in which they were softening. Cough severe; digestion bad; bowels quite loose for some months. Prescribed whiskey, one ounce three times a day; but the patient must have considerably exceeded this amount, as I found him drunk several times on making my visits.

Weight at commencement	130 lbs.
" " 1 month	130 "
" " 2 months	128 "
" " 3 "	128 "

During the course of treatment the physical signs and sputa showed that a cavity had formed in the top of the left lung, though he continually reported his cough better. The bowels have been regular for the last month. During the same time he has been troubled with hectic fever and night-sweats. Appetite and digestion continued bad throughout the period of treatment. At the commencement he went out daily, but has spent the last month in bed nearly all the time.

CASE No. 5.—A shoemaker, aged 29 years. Had always been a very intemperate man, and, although in the last stages of phthisis, continued the use of whiskey to a much larger extent than I prescribed it. Had cough a year, and several attacks of hæmoptysis. Was much emaciated, and so feeble as not to leave the house; consequently he was not weighed. Extensive deposits of tubercle in both lungs with cavities. Whiskey was prescribed, one ounce three times a day, but he really far exceeded this allowance, as he had done for a long time previously. This patient gradually sank and died two months after coming into my hands. No post-mortem examination was allowed. One feature in this case deserves especial mention as bearing upon the effects of alcohol. Just before I saw him he began to have a tubercular enlargement of one of the glands of the neck, and before he died tubercular disease of the left ankle showed itself. This was rapidly progressing at the time of his death. No case that I have seen shows so strongly the powerlessness of alcohol in preventing or arresting a deposit of tubercle as this. The patient was a drunkard in the common acceptation of the term, and continued in the excessive use of alcohol to his death; yet at three distinct periods tubercle was deposited in different parts. In the ankle, when it occurred under my observation, it came on with great rapidity.

CASE No. 6.—A carpenter, aged 47 years. Had suffered from a fracture of his ribs in youth, which considerably diminished the dimensions and mobility of his chest. He had been intemperate up to the time he came into my hands, with the exception of the last few weeks. Has had cough for two years. No hæmoptysis; has emaciated considerably. Tubercles in the tops of both lungs, principally the right. There are no physical signs of a vomica, although he is expectorating pus very copiously streaked with blood. Appetite and digestion bad. Cough very severe, with hectic. Prescribed half an ounce of whiskey three times a day, which amount he did not exceed.

Weight at commencement of treatment	134 lbs.
" " 1 month	130 "
" " 2 months	128 "
" " 3 "	126 "

The physical signs of a cavity in the right lung gradually became distinct, and are very evident at the present time. Notwithstanding this, however, his other symptoms improved so that, from keeping his bed, he went to work. Cough much less. Appetite improved, and bowels regular, but still has regular hectic. This delusive amendment, I believe, is not uncommon after the immediate irritation caused by the rupture of a tubercular abscess has passed away. I consider the amendment to have been delusive in this case because it was not accompanied by a corresponding improvement of the physical condition.

CASE No. 7.—A carpenter, aged 58 years. Has always been intemperate up to the period of treatment. Cough commenced two years ago; no hæmoptysis. Softening tubercles in the tops of both lungs, about equally

distributed. No diarrhœa nor hectic. Digestion bad, and somewhat emaciated.

Weight at commencement of treatment	107 lbs.
" " 1 month	105 "
" " 2 months	100 "
" " 3 "	100 "

This case was quite a chronic one, and, except in a gradual diminution of weight, there was no appreciable change of condition. The cough remained hard, the digestion bad, and the bowels regular.

These seven cases were males; the remainder were females. The preponderance in number of males was merely accidental, as they chanced to present themselves in the way they are reported here.

CASE No. 8.—Housekeeper, aged 36 years. Had always been perfectly temperate. Was attacked with hæmoptysis two years ago, and has had cough over since. Tubercles in the tops of both lungs, most in the right. Cough not very severe; appetite and digestion bad; bowels costive. Prescribed one ounce of whiskey three times a day.

Weight at commencement of treatment	131 lbs.
" " 1 month	130 "
" " 2 months	129 "
" " 3 "	128 "

This patient had not emaciated any before commencing the treatment, and she still continues in good condition as to flesh. At the termination of the treatment the physical signs showed a decided advance of the tubercle; the cough was also more severe. Otherwise the symptoms remained the same. (This patient attributed the change for the worse in her condition, which she herself recognized, to the depressing effect of family troubles.)

CASE No. 9.—A housekeeper, aged 39 years. Has always been a moderate drinker. Has had cough for two months; no hæmoptysis. Appetite and digestion bad. Bowels regular; no hectic. A moderate deposit of tubercle in the top of the right lung.

Weight at commencement of treatment	122 lbs.
" " 1 month	122 "
" " 2 months	122 "
" " 3 "	122 "

At the termination of the experiment her physical signs were nearly the same; the cough improved; the bowels regular; and the digestion improved. The patient attributed the amendment in her condition to the ounce and a half of whiskey she took each day. In this opinion I cannot concur, as it was very nearly the same amount she had been accustomed to take daily for years.

These cases are not so numerous as I could have wished, and a continuation of the treatment for a longer time would have given them greater weight in forming an opinion as to the effects of the treatment. Still it appears to me that important indications can be drawn from them. At the same time we should bear in mind the liability to error from the peculiarly changeable character of the disease, and the proclivity of patients to state their symptoms as improving after commencing a new course of treatment. The following table will show the weights of the patients at the different times they were taken, the first column being that at the commencement of the treatment, the subsequent ones at interval of a month:—

Case No. 1				
" 2	146	146	152	
" 3	116	113	114	112
" 4	130	130	128	128
" 5				
" 6	134	130	128	126
" 7	107	105	100	100
" 8	131	130	129	128
" 9	122	122	122	122

An examination of this table shows that in five of the seven cases where the weight was noted there was a nearly regular and progressive diminution; in one it was stationary, and in one there was an increase.

So far as this table goes, and I regard its indications as among the most important, it seems to me to be decidedly adverse to the opinion that the effects of alcohol are good in this disease. The following table exhibits the indications of the physical signs as nearly as it can be done in such a mode:—

No. 1	No. 4 Worse.	No. 7 No change.
" 2 No change.	" 5	" 8 Worse.
" 3 Worse.	" 6 "	" 9 No change.

In four of the seven cases which could properly come into this comparison there was a change for the worse. In not a single one had they improved. In Nos. 4 and 6, cavities formed during the course of treatment. Hæmoptysis occurred in two of the cases during the treatment.

The cough, according to the reports of the patients themselves, upon whom it is necessary to depend, was better in five cases; not changed in one, and worse in one. This was the only symptom which appeared to improve in a majority of the cases; and, as in these, it was not accompanied by a corresponding improvement in other respects, it appears to me probable that the judgment of the patients was at fault.

The remainder of the symptoms, generally, did not change during the treatment, those that were good remaining so, and *vice versâ*.

On the whole, it appears to me that the indications to be drawn from these cases are decidedly adverse to the use of alcohol as a therapeutic agent.

It will thus be seen that the conclusions we should have drawn from the already proved effects of alcohol upon the healthy, in regard to its action upon those who are phthisical, are borne out by facts.

I am well aware that the statistics presented in this essay are by no means sufficiently extensive to set the question at rest. But after a careful consideration of the facts presented by others, and also from the results of the observations here presented, I think the following general conclusions may be regarded as probably true:—

1. The opinion so largely prevailing as to the effects of the use of alcoholic liquors, viz., that they have a marked influence in preventing the deposition of tubercle, is destitute of any solid foundation.

2. On the contrary their use appears rather to predispose to tubercular deposition.

3. Where tubercle already exists alcohol has no obvious effect in modifying the usual course run by that substance.

4. Neither does it mitigate, in any considerable degree, the morbid effects of tubercle upon the system, in any stage of the disease.

REVIEWS.

ART. XII.—*On Consumption: its Nature, Symptoms, and Treatment. An Essay to which was awarded the Fothergillian Gold Medal of the Medical Society of London.* By RICHARD PAYNE COTTON, M. D., Fellow of the Royal College of Physicians, London; Physician to the Hospital for Consumption and Diseases of the Chest, Brompton. Second edition. London: John Churchill, New Burlington St., 1858. 8vo. pp. 302.

The Hygienic Treatment of Pulmonary Consumption. By BENJAMIN W. RICHARDSON, M. D., Licentiate of the Royal College of Physicians; Physician to the Royal Infirmary for Diseases of the Chest, and to the Margaret Street Dispensary for Consumption, etc. etc. London: John Churchill, 1857. 8vo. pp. 115.

"IN England and Wales there were, during the year 1855, no less than 52,289 deaths from consumption. The population during the same year was estimated at 18,786,914; and the deaths, from all causes, amounted to 425,703. One person, therefore, in every 359 fell, during the year, a victim to this disease; and the deaths from consumption amounted to nearly one-eighth of the total number of deaths. It may be stated that in England and Wales more than 143 persons die daily of consumption, being very nearly at the rate of six deaths in every hour, or one in every ten minutes."

The numerical facts contained in this extract from the first chapter of Dr. Cotton's work, need no aid from rhetoric in order to impress the importance of the subject of pulmonary consumption. These statistics relate, it is true, only to the British Islands; but everywhere over the known habitable globe, consumption prevails. The difference in the mortality from this disease in different countries and climates, is far less than has been heretofore supposed. There are few, if any, parts of the world in which, if epidemic and endemic diseases are excluded, the deaths from consumption do not exceed those from any other affection. The study of this disease in its scientific and practical relations is rendered important by its prevalence and fatality. Its importance is the greater the more the disease admits of prevention and cure. And with respect to these objects of the study of the disease, the opinions of medical men, within the past few years, have undergone an important change. It is superfluous at the present moment to discuss the curability of tuberculosis of the lungs. Recovery may take place not only in the early stage, but after the progress of the disease has involved considerable damage to the respiratory organs. The prevention of the disease is less demonstrable, but there is no room for doubting that judicious management may arrest its development as well as its progress. In view of what medical science and art may hope hereafter to accomplish in the way of the prophylaxis and treatment of this universally prevalent and most fatal of diseases, pulmonary consumption may be said emphatically to be *the* important subject at this time pertaining to medicine.

The two works whose title pages head this article, have been written with direct reference to the preventive and remedial treatment of pulmonary

consumption. Dr. Cotton considers the symptoms, nature, etc., of the disease—devoting to these portions of the work a little more space than to the treatment. But the practical value of the work consists of the views presented in the portion devoted to the treatment. Dr. Richardson's treatise relates specially and entirely to the treatment, and particularly to hygienic measures. It is, however, impossible to shut out of view the probable nature of the disease, or, in other words, its pathology, in treating of its prevention and cure; and we are not, therefore, left to guess the views of Dr. Richardson with respect to theoretical points which must, to a greater or less extent, be the basis of practice. We design in this paper to sketch the general plan of the treatment of pulmonary consumption which accords best with our present knowledge, and the notions of the most judicious practitioners. In so doing we shall notice the practical opinions held by the authors just named. Nowhere in practical medicine has the change in practice, within a few years, been more radical than in the treatment of consumption. This has been, in part, the result of a corresponding change in pathological views, and it is partly attributable to the fruits of clinical observation. The effect on the mortality from phthisis is not numerically determined, but it is unquestionable that recovery from the disease is an event less rare of late than a few years ago. For ourselves, we cannot doubt that an extension of the pathological and practical views now entertained, and their more general diffusion, are destined to accomplish much toward the prevention and cure of pulmonary consumption.

We have said that theoretical points relating to the pathology of tubercle, must, to a greater or less extent, be the basis of practice. Of the points involved in the plan of treatment now in vogue, the most important is the dependence of the tuberculous deposit on a special morbid condition, or a peculiar cachexia, which precedes any pulmonary affection. With respect to this point, Dr. Cotton says:—

> "The term phthisis, or consumption, is now universally and exclusively applied to a peculiar and obscure condition of the whole system, in which, instead of the healthy nutritive material required for the growth and reparation of the body, there is produced in the blood a morbid substance which, sooner or later, appears as *tubercle* or *tuberculous matter* in the pulmonary structures."

We might criticize the use of the word *substance* in this quotation, since it is not certain that the tuberculous matter exists, as such, in the blood. The immediate antecedent morbid condition, or cachexia, is probably seated in the blood, but whether tubercle is preformed and deposited in the lungs by a kind of eliminative effort, or whether different elements of the deposit are thrown off separately and combined in the act of exudation, are questions which our present knowledge does not enable us to answer. Practically, the doctrine that tubercle is exuded, not as a result exclusively of pulmonary inflammation or any other local process, is immensely important. This is virtually saying that pulmonary tuberculosis is not primarily and essentially an affection of the lungs; and hence, the treatment of the affection, to be rational and effective, must be addressed to other than the local conditions connected with the deposit.

Dr. Cotton limits the application of the terms phthisis and consumption to the antecedent morbid condition, or cachexia, which stands in immediate relation to the deposit of tubercle. This condition must exist for a greater or less period prior to the occurrence of the deposit; and until the deposit occurs, the patient cannot be considered as affected with tubercle. We quote the author's language on this point:—

"At the first onset of consumption, the lungs are not necessarily tubercular. It is true that, before the pulmonary structures have become implicated, we often fail in detecting the disease, the premonitory symptoms having been too short or obscure to attract observation; in a fair number of cases, however, these are sufficiently obvious, and, probably, in none are they entirely wanting. The term *phthisis* or *consumption* is alone applicable to that peculiar morbid condition of which I have spoken in the preceding chapter, and which involves, amongst other consequences, a tubercular state of some of the internal organs; whilst *tubercle* expresses the effect of such a condition—the one being related to the other in exactly the same way that saccharine matter is to diabetes, and lithate of soda to gout."

This distinction is theoretically just, yet it very rarely admits of being carried practically into diagnosis. The deposit of tubercle seldom occurs, for the first time, while patients are under medical observation. It has already occurred, in the vast majority of cases, when patients present themselves for medical treatment. If there be appreciable symptoms which denote the morbid condition constituting the disease, before the exudation takes place, their importance is sufficiently obvious; for, certainly, it is highly desirable to make the diagnosis, if possible, at this stage. The author indicates a group of symptoms which, in certain cases, mark the preliminary stage. They are not, however, either single or combined, very distinctive. Loss of weight from no other obvious cause, pallor of the countenance and deficient strength in a person between the ages of twenty and thirty, and especially if the person be of a tuberculous parentage, should always excite strong suspicion of danger, if the deposit have not already taken place. When these symptoms of the tuberculous cachexia are marked, the physical signs generally show that a deposit has already taken place. But there are exceptions to this rule, and in these exceptional instances the deposit may subsequently take place, or, as may be rationally conjectured, this occurrence is prevented by proper management.

Dr. Cotton brings out in connection with the pathological distinction just referred to, a truth which has not been sufficiently considered by medical writers, viz: the want of relation between the local affection and the general symptoms. He says:—

"The truly consumptive symptoms are never dependent upon the amount or even the condition of the tubercular deposit, but upon the degree of functional disorder under which it has been produced or altered; and of this no better proof can be given than the fact that cases often present themselves in which, although the tubercle is as yet unsoftened, *consumption* is more marked, and life apparently more threatened, than in other cases where the pulmonary structures are broken down into cavities."

Clinical observation abundantly verifies the correctness of this statement.

The treatment of consumption, based on the pathological doctrine which has been stated, has reference to an unknown morbid condition, probably seated in the blood, the proximate cause of the exudation of tubercle. This condition prevented or removed, the deposit of tubercle does not occur, or, if it have occurred, there remains but the local pulmonary affection to be recovered from. Now, on what remedy or remedies is the practitioner to rely for the prevention and removal of this condition? Dr. Cotton and Dr. Richardson do not undertake to answer this question. These authors do not recognize any special remedy or remedies for consumption. Cod-liver oil they deem serviceable, as a food, in the cases in which it is taken without great repugnance and well borne by the stomach. The hypophosphites are not noticed. These, although in some cases useful,

have been already shown by clinical observation to have no claim to the character of a specific remedy. To say that no remedy has as yet been ascertained to have a special efficacy in consumption, is by no means saying that remedies are not useful. Various tonics are often serviceable in no small degree; and we are glad to see that both authors attach considerable value to the use of opium to allay cough and other effects of the local affection. Of course, palliative medication is important; night perspirations, diarrhœa, and other symptoms are to be relieved. If there be any article in the materia medica which may be considered as in any measure specially efficacious, that is, exerting a remedial effect on the morbid condition or cachexia, on which the deposit of tubercle depends, we believe it to be alcohol. The effects of the abuse of alcohol, terrible as these are, since they involve destruction of the mental and moral, as well as the physical constitution, are antagonistical to the deposit of tubercle; and clinical experience shows a decided influence of alcohol as a remedy in arresting and retarding tuberculous disease. The extent of this influence, and the circumstances which in individual cases on the one hand favour, and on the other hand obstruct it, are yet to be determined. In neither of the works under reviewal is sufficient importance, as it seems to us, attached to the use of this remedy, although it enters into the treatment inculcated in both. A grave question is undoubtedly connected with the anti-tuberculous influence of alcohol, viz: How far its use as a remedy for tuberculosis may tend to encourage intemperance. We are not disposed to overlook or to depreciate the gravity of this question. We are free to admit that, as an alternative, intemperance has to our mind more terrors than tuberculosis. Thus far our own experience, which has been considerable, has not afforded an instance of intemperate habits formed by the use of spirits remedially in cases of tuberculosis. We have heard of such instances, but the advice of the physician is sometimes made a convenient pretext for indulgence of an appetite which he has had no hand in producing. To prescribe an alcoholic remedy is not to sanction the use of spirituous beverages as an element of dissipation or of social enjoyment. Prescribed as a remedy, it is to be taken like other remedies, not at public places, nor at the festive board, nor with boon companions. Moreover, as a remedy for tuberculosis, it is to be taken within the limits of any appreciable excitation of the nervous system. Tuberculous patients sometimes bear large quantities without being sensible of any of the characteristic exhilaration; and the latter, when produced, is evidence that the proper bounds have been passed. Regulated with every precaution, it is probable that in some persons constituted with a proclivity to carry the use of alcoholic stimulants to excess, they cannot safely be employed. It is to be hoped that the objection on the score of danger of intemperance applies only to those with whom a craving for stimulants is an idiosyncrasy. But with reference to this remedy, a correct diagnosis of tuberculous disease is vastly important. The practitioner may well tremble at the responsibility of advising it, if he be guided in his fears of phthisis by the apprehensions of the patient. It is a dangerous remedy for the melancholic and hypochondriac, and cases are common enough in which, under these circumstances, patients fancy that they are either tuberculous or in danger of consumption. Here is a contingent consideration showing the value of those means of investigation which generally enable the diagnostician to decide positively whether tubercle be or be not present; we allude to the methods of physical exploration.

By the authors of the works whose title pages have served as a text for

these remarks, hygienic treatment is mainly relied upon for the prevention and cure of consumption. We cannot doubt that what has been accomplished within late years in this province of practical medicine, has been chiefly owing to a radical change in the hygienic measures employed, and their substitution for an injurious medication. Much is to be expected in addition to what has been already accomplished. The prevention of phthisis offers a tempting field for medical philanthropy. If the mortality from this disease is ever to be greatly reduced, it must be by prevention rather than cure. The probabilities of recovery may become much greater than they now are, but it can hardly be expected that phthisis can be divested of great danger. How far the disease is preventable by sanitary precautions can only be conjectured. We should be better prepared to judge beforehand if we knew what importance, as regards the causation of the disease, belongs to the various modes in which the laws of health are violated. That an innate predisposition or diathesis is often involved cannot be doubted, but that even in these cases the development of the cachexia may be on the one hand prevented, and on the other hand that it is often favoured by extrinsic circumstances, is more than probable. Statistical researches show that a sedentary life, in-door occupations, deficiency of food and light, etc., contribute to the fatality from consumption. There is scope for continued investigation of the parts which the various deleterious agencies incident to the atmosphere, diet, regimen, abuse of the faculties of body and mind, and other sources of disorder, respectively play in the etiology of this disease. And there is abundant room for the popular diffusion of the knowledge on this subject which has been already acquired, and for those reforms and improvements which can never be fully carried out so long as a large portion of even the intelligent public are so little acquainted with, and have so little interest in sanitary science. The discussion of this subject would be here out of place. Dr. Richardson's treatise is to be particularly commended to the medical reader interested in hygienic measures relating to the atmosphere and ventilation. But before passing from preventive to notice curative measures of hygiene, we wish to say a few words with regard to dietetics.

It has been one of the freaks of modern refinement and modern fanaticism to degrade good living and stigmatize it as not only hurtful, but a sinful indulgence. The over-delicate lady, together with the poetaster and the sentimentalist of either sex, are ashamed to eat well, that is, to consume habitually a liberal allowance of substantial food. It is considered as gross, vulgar and oppressive to the finer qualities of our nature. Great simplicity and paucity of diet by many appear to be regarded as required, not only by good taste, but by a proper sense of moral and religious duty. The evils of eating have been a favourite theme for the preacher, the moralist and the pseudo-physiologist. Nor has the medical profession been free from participation in extravagant notions on this subject. Far from it. It has been customary to trace a large share of diseases to the stomach. Low diet has been deemed indispensable to the management of most affections, and not unfrequently this has been carried to the verge of starvation. We hope not to incur the charge of advocating gluttony by endeavouring to call attention to what we believe to be popular and medical errors on this subject. To define, illustrate and defend our position would involve a lengthened discussion in which we do not propose now to engage. Suffice it to say that we believe dietetic habits voluntarily restricted to belong among the accessory circumstances, in some instances promoting the tuber-

culous diathesis. Poor living is a fault with some, while it is a misfortune with a larger number, and the former, as well as the latter, are thereby rendered more liable to consumption. This disease is not rife among epicures and gormandizers, albeit they incur the risk of other evils. We do not advocate intemperate indulgence at the table, but we do advise good living as, among other advantages, diminishing the chances of phthisis. As a reason for this advice let it be considered that, with our present views of the hygienic treatment of tuberculosis, so soon as a deposit of tubercle occurs, patients are enjoined to live as generously as possible. Now if this be important directly tuberculosis is declared, would it not have been advisable prior to the development of the disease? in other words, if certain dietetic habits are curative, is it not fair to conclude that they are, to a greater or less extent, prophylactic? With this inquiry we leave the subject.

The hygienic treatment of consumption directed with the hope of effecting an arrest of, and recovery from the disease, relates to diet, exercise, climate, clothing and various matters of minor consequence. The general plan of diet has just been foreshadowed. Under this head Dr. Cotton remarks:—

"The diet is an important subject, and one very often misunderstood. From a fear of increasing the cough or exciting fever, many patients are scrupulously interdicted every kind of nourishing diet, and are fed upon what are usually, and very significantly called 'slops.' In this way they become more feeble, the tubercular deposit increases, the softening process is accelerated, and, when too late, the error becomes apparent. Unless there should exist some inflammatory complication, or urgent dyspepsia, every one at this stage (the first stage) of phthisis needs support, and should live generously, taking a full amount of animal food, as well as ale, or porter, or wine. Such a system of diet, far from aggravating the cough, generally lessens it; and although it may induce at first some slight feverishness and discomfort, these will commonly subside under its continuance."

Dr. Richardson is not less explicit under this head, advising, in a larger proportion than in health, those elements of diet distinguished as respiratory, viz., fatty and oily foods. He recommends especially butter, cream and milk. He might have added sugar, which we believe to be a most useful adjunct to the diet of the consumptive. We should have been better pleased with the injunctions respecting diet, had they been still more emphatic. Generous living is not merely allowable, but it is to be enjoined upon the consumptive as an essential portion of the curative treatment. The desire for hydro-carbonaceous food is to be promoted by every possible way, and the appetite cultivated. It is far better to run the risk of occasional inconvenience or disorder from overtasking the digestive powers, than to incur the certain disadvantage of a diet insufficient in quantity or in nutritive properties.

On the subject of out-door exercise, we quote from Dr. Cotton's work as follows:—

"Fresh air and exercise form equally important parts of treatment. It was formerly the custom when persons had a cough and were considered phthisical, to confine them to the house, or even to one room, and, by carefully closed windows and sundry other arrangements, to avoid the slightest change of temperature; but this pernicious practice has happily been rendered obsolete by the advance of improved therapeutics. Whenever the strength will permit, daily out-door exercise should be strictly enjoined. Should walking be too fatiguing, driving in a close or open carriage, according to the season of the year, may be substituted; but proper days and occasions must be selected, and nothing should

be done which would induce exhaustion or occasion cough. * * *, I am far from advocating the indiscriminate use of out-door exercise, and I am anxious only to express my conviction that, under proper regulations, it constitutes one of the most essential parts of treatment."

We fear that the moderate tone and the qualifications with which out-door exercise is recommended in the foregoing quotation, will not secure for the consumptive the full amount of advantages to be derived from this part of the hygienic treatment. A patient affected with tuberculosis must labour for recovery as the working-man toils for his daily bread; he must earn health by his muscular exertions. This is not putting the case in too strong a light. We could adduce from our own observations abundant evidence of the benefit to be derived from hard, persevering exercise in the open air. In this respect the day labourer who becomes tuberculous is more favourably situated than the man of leisure and luxury; and this is shown by the greater frequency with which the disease progresses rapidly among the latter class. The inclinations and the present comfort of the patient are not to be considered; nor is the state of the weather to be much regarded. A tuberculous patient is not more liable to be attacked with pulmonary inflammation, as an effect of exposure, than persons non-tuberculous, and even if pneumonia, bronchitis or pleurisy occur, it does not follow that the tuberculous affection will be unfavourably affected. The consumptive patient should live as much as possible out of doors, and engage in occupations which interest the mind, as well as the muscles, to the fullest extent of his powers of endurance.

On this subject Dr. Richardson is more earnest than Dr. Cotton. He adopts the views of the late Dr. Joseph Parrish; and of the truly great practitioner, James Jackson, of Boston, as set forth in his "Letters to a Young Physician." Dr. Parrish's remarks are quoted in Dr. Richardson's work, and since these were published nearly thirty years ago, and are of especial interest from the fact that their importance, as is well known, was exemplified by the author's personal experience, we reproduce them here. They appeared in the *North American Medical and Surgical Journal* for 1830.

"Vigorous exercise, and a free exposure to air, are by far the most efficient remedies in pulmonary consumption. It is not, however, that kind of exercise usually prescribed for invalids—an occasional walk or ride in pleasant weather, with strict confinement in the intervals—from which much good is to be expected. Daily and long-continued riding on horseback or in a carriage is, perhaps, the best mode of exercise; but when this cannot be commanded, unremitting exertion of almost any kind in the open air, amounting even to labour, will be found highly beneficial. Nor should the weather be scrupulously studied. Though I would not advise a consumptive patient to expose himself recklessly to the severest inclemencies of the weather, I would, nevertheless, warn him against allowing the dread of taking cold to confine him on every occasion when the temperature may be low, or the skies overcast. I may be told that the patient is often too feeble to be able to bear exertion; but except in the last stage, when every remedy must prove unavailing, I believe there are few who cannot use exercise out of doors; and it sometimes happens that those who are exceedingly debilitated, find, upon making the trial, that their strength is increased by the effort, and that the more they exert themselves the better able they are to support the exertion."

We cannot doubt that not a few lives would have been saved, had the importance of Dr. Parrish's precepts and example, as regards exercise in phthisis, been more fully appreciated during the last thirty years.

Change of climate is often highly beneficial in consumption. We take

it no one will deny this assertion. Yet we cannot but think that the confidence placed in change of climate by physicians and patients has, on the whole, had an unfavourable effect on the successful treatment of the disease. It is too often the case that a special influence from climate is expected, and consumptives imagine they have only to go and passively receive the benefit imbibed from the atmosphere of the favoured spot which they have selected. Nothing can be more groundless than such an expectation; and it does harm by taking the place of those rightly directed efforts, as regards diet and exercise, which are essential parts of the treatment. Better far employ diligently all other hygienic measures, in an unfavourable climate, than neglect them in the situation which combines the greatest climatic advantages. There is no special remedial virtue in any climate. Consumption, as Dr. Cotton remarks, is ubiquitous. It exists in all zones and tropics. Of the great number who in the early stage of the disease, leave their native soil to sojourn in places which are considered as more favourable for recovery, the majority die. Nevertheless, change of climate is often highly beneficial. Why is it so? Because change itself is sometimes useful. Because it involves, in certain cases, relief from the cares of business, and recreation. Because it sometimes affords opportunities or inducements for out-door exercise which the patient cannot or will not take at home. We do not deny that, irrespective of these incidental advantages, there is some value pertaining intrinsically to climate. This is comparatively small, and is by no means uniform as regards different persons; one patient may do better in a cold, and another in a warm climate. We see a difference among healthy persons in regard of the influence of different climates; some have more physical enjoyment and vigor in one latitude, and some in another. So, winter agrees best with certain constitutions, and others prefer much the summer season. If, then, it be asked, where is the best spot on this earth for the consumptive, it is evident that the question does not admit of an answer. The question is often answered, but it is answered by a hundred different persons in a hundred different ways—a fact which goes to sustain the correctness of the assertion just made. The interminable discussions respecting the comparative merits of different places of resort for consumptives, form, in our opinion, an almost useless portion of medical literature. But is the patient to be left without advice on this point? By no means. He is to be advised to select a climate which, so far as may be judged from his experience, will be most congenial. Uniformity and dryness are the most important recommendations belonging to the climate itself. The place selected should have other than climatic attractions; it should offer resources for recreation and agreeable occupation. A spot where consumptives most do congregate should be shunned as much as a consumptive hospital. So far as our observation goes, we have seen most marked benefit from European travel; and we attribute it to the greater enjoyment and the stronger inducements to active exercise than can generally be offered by most of the quiet spots to which patients are enticed by the *ignis fatuus* of a health-restoring climate. Travelling we deem vastly better than a fixed residence, in the majority of cases. A journey of some thousands of miles on horseback is far more likely to be serviceable than a season of comparative repose in the choicest spot which can be selected. There are numerous circumstances pertaining to individual cases which are to be taken into account in advising change of climate, irrespective of the stage of the disease and the rapidity with which it is progressing. Of course this is not the place to enter into a consideration of these. We

will only mention one point which is often overlooked; this is, the state of the patient's mind as regards love of change, or the willingness to leave home. If the measure involve constant irritation, ennui, disgust, and homesickness, it will certainly not prove beneficial.

In the remarks by Drs. Cotton and Richardson under the head of change of climate, we find nothing to which we desire to take exceptions. The reader will of course infer from this statement that the views of these authors are not at variance with those which have just been expressed.

On the use of *respirators* the two authors are not entirely agreed. Dr. Richardson regards them with more favour than Dr. Cotton. We cannot see with what end they are to be recommended except to prevent cough when this symptom is provoked by breathing cold air. So far as their use is based on the idea of protecting the bronchial mucous membrane, the importance of the end may be doubted. Since it is not certain that the condition of this membrane has much, if anything, to do with the deposit of tubercle, we fancy that the usefulness of respirators consists mainly in the satisfaction which the patient is apt to feel in taking an unusual precaution.

The subject of clothing is by no means unimportant in relation to the treatment of consumption. Perhaps its importance has been over-estimated. It is certain that over-precautions as regards dress are often taken, which are injurious by nurturing an undue susceptibility to changes of temperature. The popular tendency is to protect the surface too much, and to burthen the body with an overplus of clothing. This is one extreme; but the others has its followers, and we see some consumptives leaving off woollen under-garments, even during the winter season, in a northern climate. Candor compels us to say that we have known this to be done, in deviation from the custom of years, without any apparent disadvantage, but other hygienic measures of a less questionable character were at the same time resorted to. Surrounding the body with a non-conductor of heat as a substitute for the hair, feathers, and wool with which nature has provided inferior animals, is a rational precaution. With reference to this point, we quote from Dr. Richardson's work:—

"For the consumptive, flannel clothing is always required, and it should cover the whole of the body. The poorest man or woman may avail themselves of this, for it matters little what the outer garments are if the under ones are non-conductors of heat. The consumptive patient should sleep also in flannel; not in the dress worn during the day, but in a flannel gown. The thickness of flannel must vary according to the sensations; as far as possible, the feeling of absolute cold ought at all times to be prevented."

Various matters pertaining to the hygienic treatment of consumption are not embraced in the subjects which have been noticed. The importance of pure air, sufficiently large sleeping apartments, agreeable mental occupation, etc., we pass by in order to devote the remainder of our space to a few questions, connected with this disease, which have important practical bearings.

Several questions of interest and importance relate to the occurrence of hæmoptysis. How far is this symptom diagnostic of tuberculosis? What are its relations to the deposit of tubercle? What effect has it, if any, on the progress of the disease? What measures of treatment does it call for? These and other inquiries open up a field for clinical study, which, although it has been to some extent cultivated, is by no means exhausted. It is certain that this is not unfrequently the first palpable symptom of a

tuberculous deposit. That in some instances it precedes the deposit, and is to be considered as a symptom of the preliminary stage of consumption, is almost as certain. That it occurs without being followed by tubercle or any other disease, and in cases in which its occurrence cannot be imputed to cardiac disease or any obvious cause, we are assured from instances which have come under our observation. Clinical facts show that it sometimes denotes an abundant and rapid exudation of tuberculous matter. Under these circumstances it sometimes marks an epoch when the condition of the patient becomes suddenly alarming, and from which the decline is rapid. It is natural then to attribute the change to the hemorrhage, but the latter is only a concomitant, and probably had no agency in producing the subsequent condition of the patient. In other cases, so far from being symptomatic of a sudden and copious irruption of tubercle, it occurs when the deposit is small, and the disease apparently progresses more slowly after than before its occurrence. Clinical observation shows that the frequent occurrence of hæmoptysis characterizes some cases in which the progress of the disease is unusually slow, and there is ground for the opinion that, in these cases, the effect of the hemorrhage is salutary. Patients often experience marked relief of cough and other pulmonary symptoms after an attack of hæmoptysis. In fact, we have been led to think that an effusion of blood sometimes occurs as a substitute for a fresh exudation of tubercle. Here are expressed, briefly, some views which have direct practical bearings, but it must be confessed, the accumulation and analyses of facts are requisite before we are authorized to answer fully and positively the questions which have been propounded. With our present knowledge, however, hæmoptysis does not call for active therapeutic measures. Its occurrence generally occasions so much alarm on the part of patients and their friends, that the practitioner can hardly refrain from efforts to arrest the hemorrhage on this account.

Our object in the preceding remarks is mainly to enter a protest against the custom of bloodletting in hæmoptysis, a custom which, although less observed than formerly, is still too often followed.

We are disposed to find fault with Dr. Cotton for not being sufficiently decided on this subject. He says that "bleeding should never be employed on ordinary occasions, nor without bearing in mind that phthisical persons can more easily lose blood than remake it;" and he adds, "practically, it will very rarely indeed be found necessary." But he admits that "the propriety of bleeding is a point often difficult to decide;" and that "when there is a disposition to plethora, with a strong pulse, a slight abstraction of blood from the arm may be serviceable." These remarks presented thus, antithetically, show the cautiousness of the author, and we fear that some readers, prone to sanguinary measures, may find in the indefiniteness with which the subject is treated, a warrant for bleeding when it should not be resorted to. We have hazarded the opinion, it is true, that hemorrhage from the lungs may be an advantage occurring in the place of a tuberculous exudation. This is not saying that the detraction of blood can ever procure the same advantage; nor that the loss of blood by bloodletting, added to the loss by hemorrhage, is ever useful. It would perhaps be an extreme view of the subject to consider bloodletting as never proper, but, assuredly, the exceptions to the rule of its inappropriateness are infinitely rare. Dr. Richardson's language with reference to this subject is sufficiently strong. He says:—

"To draw blood from a man already bleeding from the lungs, to put him on

water diet, to purge him with salts, is opposed equally to physiology, pathology, and practice. If a man were bleeding from the femoral artery, would any one then think of bleeding him from the arm? Is venesection the remedy for a woman dying of uterine hemorrhage? Surely not; nor is it the remedy in hæmoptysis."

Certain questions important in their relations to pathology and practice, have reference to the coexistence with pulmonary tuberculosis of affections of the larynx and pharynx. Of laryngeal phthisis Dr. Cotton says:—

"*Laryngeal phthisis*, although often looked upon as a distinct form of consumption, differs in nothing from ordinary and chronic phthisis, except that the larynx, and sometimes also the trachea, being implicated in the disease, the whole symptoms become aggravated, and the general aspect of the case is rendered less promising, in consequence of the suffering and distress which are thus superadded."

We take it that this is the correct explanation of what is called by the misnomer, laryngeal phthisis. But so long as this term is employed, constant explanations will be necessary in order that false views may not be perpetrated. The idea conveyed by the term has become obsolete, and it is desirable that the term should be dropped. Chronic laryngitis, in the vast proportion of cases, is associated with tuberculous deposit in the lungs, and when thus associated it is consecutive to the pulmonary affection; it is, strictly speaking, a complication of phthisis. We suppose that Dr. Cotton is sustained by the opinions of the best pathologists in regarding the laryngitis as due to the deposit of tubercle in the larynx. Yet, there are practitioners who appear to consider the laryngitis as the point of departure for the tuberculous disease, and, if we may judge from their practice, attach importance to local applications within the larynx as preventives of, or remedies for, consumption. In the excited discussions which have taken place in our country during the last few years respecting the possibility of introducing sponges into the larynx, and the best means of bringing topical remedies into contact with the laryngeal mucous membrane, an important question has been, in a great measure, lost sight of, viz., *cui bono?* How much good is to be expected from local applications to a tuberculous affection of the larynx, supervening on a tuberculous deposit in the lungs? We need hardly appeal to the fruits of clinical experience for an answer to this question. But clinical experience is not silent on the subject. The practice has now been pursued for several years to a considerable extent, and instead of growing in favour it is evidently dying out. Many practitioners who for a time resorted to it, have ceased to employ it. There is danger, from the tendency to extremes, that it will fall into too great neglect. In a certain proportion of cases it is useful as a palliative measure, and although the number of persons who derive benefit from it may be small, they should not be deprived of the relief which it affords. That the introduction of the practice is a positive addition to the resources of our art, is not to be denied. But it would argue either unsound pathological views, or something worse than this, to hold out inducements to patients to resort to it as a curative measure.

It is a digression to refer to the efforts which have been made to introduce medicated liquids into tuberculous cavities in the lungs, but the subject naturally suggests itself in this connection. Here, too, discussion appears not to have gone much beyond the question of practicability. But here there is a good reason for this limitation, viz., the impracticability is sufficiently clear. Unless a tube can be actually introduced into a tubercu-

lous cavity, it is plain that a liquid injected into the trachea or a bronchus must, in obeyance of the law of gravity, flood the tubes and cells below the site of the cavity, before the latter is filled; hence, inasmuch as tuberculous cavities are situated at the apex in the vast majority of cases, at least one lung must be placed completely *hors du combat* before the operation can be completed. The sudden suppression of the function of one lung only, and not of both lungs, requires that the injection shall be limited to one bronchus, and if the tube through which the injection is made cannot be carried into one bronchus, a fatal asphyxia would precede the filling of the cavity or cavities. Of the practicability of introducing a tube into the cavities themselves, the reader can judge who has often attempted this operation on the dead subject. After these remarks, into which we have been led digressively, we deem it hardly necessary to inquire as to the amount of benefit to be expected from the local effect of a medicated liquid within a tuberculous cavity. This inquiry would be sufficiently answered by another, viz., what relation has the local affection to the disease?

Respecting the coexistence of pharyngitis and phthisis, we shall offer a few remarks to which we would ask the attention of the reader. But we shall premise Dr. Cotton's remarks on this subject:—

"*A low inflammatory condition of the pharynx* is not an unfrequent attendant upon phthisis, and sometimes appears among its earliest symptoms. It usually commences at its posterior wall, and has a tendency to spread, not only over the whole pharynx, but also into the larynx, laying, in many cases, the foundation of what is termed *laryngeal phthisis*. The mucous membrane presents, at first, a number of dark or vivid red patches or streaks, which gradually coalesce; a yellowish, tenacious mucus soon appears upon its surface; the tonsils become enlarged, and the uvula is elongated. If the mucous follicles upon and behind the tonsils be now carefully examined, they are often seen to contain a yellowish-white substance, apparently of a scrofulous nature, which, becoming expelled, frequently leaves behind it small ulcerations. These ulcerations sometimes spread and involve a considerable portion of the pharynx, especially at its posterior part. The epiglottis, meanwhile, frequently becomes red and congested; the laryngeal mucous membrane participates in the attack; and the general symptoms of laryngeal inflammation—of which more will be said elsewhere—make their appearance. In many instances, the diseased action remains limited to the pharynx; but in those cases where it extends to the larynx, it sometimes altogether leaves the pharyngeal membrane."

The tone of this review thus far will lead the reader to acquit us of being actuated by a spirit of criticism in dissenting *in toto* from the pathological doctrine embodied in the foregoing extract. We believe the author to be in the wrong, and the error is not without evil practical consequences. Chronic pharyngitis, with or without an accumulation of sebaceous matter in the follicles, is exceedingly common, at least in this country. It is by no means confined to members of the clerical profession, but it occasions in this class greater apprehension than with others lest the voice may become impaired. It is comparatively rare in females. It is a very obstinate affection, hardly less so since than before the introduction of swabbing the throat with a solution of the nitrate of silver. This practice, in conjunction with the popular diffusion of the error contained in the foregoing extract, has served to show that the affection prevails much more extensively than had previously been supposed. In several points of view, it is the analogue, in the male, of the chronic inflammation of the mouth of the uterus so common and rebellious in the female. Dr. Cotton thinks that the inflammation is liable to extend into the larynx and lay the foundation

of *laryngeal phthisis;* in other words, it is a forerunner of pulmonary consumption. This is the pathological view from which we dissent. This view is widely disseminated among the people at large in this country. Persons with chronic pharyngitis (and their name is legion) suppose that they are in danger of a gradual extension of the affection downward till it reaches the lungs and eventuates in consumption. This idea is assiduously fostered by the host of throat doctors who have made their appearance within late years. These men, taking advantage of the fears of their clients, profess to prevent and cure consumption by thro t swabbings or injections and medicated inhalations. We are confident in the correctness of the opinion that the doctrine enunciated by Dr. Cotton finds no support in clinical experience. We say this after abundant opportunities for observation for many years. The condition of the system associated with chronic pharyngitis, is not the condition favourable for the development of tuberculosis; nor is it converted into the tuberculous diathesis. So far from the existence of chronic pharyngitis pointing to phthisis, it renders the latter less probable. In a case in which the evidence of phthisis is so slight as merely to constitute ground for suspicion, chronic inflammation of the pharynx, exclusive of laryngitis, militates against the supposition that the disease is present; it is entitled to some weight against the diagnosis. We have been led to this rule not by speculative reasoning, but by clinical experience, and we have for several years acted upon it. It is pleasant to feel warranted in giving to patients with this affection, whose apprehensions are enhanced by the morbid condition of the nervous system often associated with it, positive assurances that they neither are, nor are likely to become consumptives; but here, as in many other instances, gratification of this kind conflicts with selfish interests. This class of patients are made to contribute largely to the profits of itinerant consumption-curers.

In conclusion, we would revert for a moment to a point noticed at the commencement of this review, viz., the deposit of tubercle by no means covers the pathology of phthisis or consumption, but is merely one of the effects of the disease. This fact is illustrated by the striking want of correspondence often existing between the general symptoms and the amount of deposit. We see patients with a small deposit presenting a frequent pulse, perspirations, debility and rapid emaciation; and, on the other hand, an abundant deposit may be, so far as symptoms are concerned, almost latent. This is not solely because the presence of tubercle produces in one person great commotion in the system, and in another person comparatively little or even no disturbance. There is, it is true, a difference in this respect; an equal amount of deposit is borne differently by different persons. But the remarkable contrast in the general symptoms which different cases present, is owing, in a great measure, to variations as regards the special morbid condition or cachexia preceding the deposit, and which, in fact, constitutes the disease. Again, the rapidity with which the disease goes on to a fatal termination, is not commensurate with the quantity of tuberculous matter deposited, nor with the secondary complications. The disease destroys, not alone by its local effects, but by the general disorder which it occasions, irrespective of these effects. Every one accustomed to determine the amount of deposit, so far as this may be done by the physical signs, must have been led to consider this amount as no criterion by which to estimate the immediate danger and the probable duration of the disease. The pulse, the skin, the appetite and digestion, the emaciation and the state of the vital forces, are far more to be relied upon in the prognosis. Hence, in a series of exami-

nations after death, between a moderate collection of crude tubercles and almost complete destruction of the lungs, there will be found every degree of gradation. There is then, a great difference in different cases in the intrinsic tendency of the disease to a fatal result, independently of the morbid condition of the lungs. This fact is to be taken into account in judging of the success of treatment. Measures which may succeed in the cases in which the diathesis is weak, may be wholly nugatory when the diathesis is strong. The tendency of the disease, in a large proportion of cases, is to end fatally sooner or later; but there are exceptions to this rule. The cachexia may be, as it were, exhausted by a small deposit, and the disease thus undergoing arrest, recovery takes place, perhaps without any remedial measures. The frequency with which obsolete tubercles are found in bodies dead with various affections, is in this way accounted for. We are satisfied that spontaneous arrest and recovery from tuberculosis takes place much oftener than is generally supposed. And the object of the physician is to aid in effecting what nature unaided sometimes effects, viz., the removal of the cachexia and the eradication of the diathesis. It cannot be too much reiterated that this object is to be effected, not by special medication, but hygienic measures, by which the body is invigorated, renovated and reconstructed.

Of the two works whose title-pages preface this review, we have noticed certain parts only, which relate to the pathology and hygienic treatment of consumption. The work by Dr. Cotton embraces a brief consideration of the general characters, minute structure, and chemical composition of tubercle; its situation; the identity of consumption and scrofula; the relation of consumption to other diseases; the causes of the disease, its symptomatology and its physical signs. Dr. Richardson's work is more limited in its scope, being confined to the hygienic treatment. It contains much interesting and useful information within a small compass, and is written in a sprightly, racy style, which renders it quite attractive. A. F.

ART. XIII.—*On Epilepsy and Epileptiform Seizures, their Causes, Pathology, and Treatment.* By EDWARD HENRY SIEVEKING, M. D., Fellow of the Royal College of Physicians; Physician to, and Lecturer upon Materia Medica at, St. Mary's Hospital; etc. etc. etc. 12mo. pp. 267. London, 1858.

Epilepsy and other Convulsive Affections, their Pathology and Treatment. By CHARLES BLAND RADCLIFFE, M. D., Physician to the Westminster Hospital, etc. Second edition, revised and enlarged. 12mo. pp. 383. London, 1858.

THE etiology and pathology of convulsive diseases still remain open subjects for investigation. Our knowledge in relation to them is as yet inexact and limited—much more so than might reasonably have been expected considering the light that has been shed upon the physiology of every portion of the nervous system by the labours of recent experimentalists, and the long array of facts that have been recorded in illustration of its several morbid conditions.

We may, perhaps, confidently assume, as a general proposition, that all

convulsive phenomena, from the mere twitching of a single muscle to the most violent and prolonged agitation of every voluntary muscle of the body, are the result of an irritation or other morbid condition of some portion of the nervous centres, and that the variations observed in the character of the convulsive seizures in different cases are due to the particular portion of the nervous centres, which is the seat of the irritation or disease, and to the greater or less extent of these centres which is morbidly affected.

We are probably justified in advancing even a step further than this—by referring the predisposition to the occurrence of convulsions in certain individuals, while others are almost entirely exempt from them under apparently the same kind and degree of irritation—the same form and extent of disease—to a particular condition of constitution inherited or acquired—a peculiar nervous temperament, a convulsive diathesis. This condition of constitution, marked by an imminency of convulsive movements in the voluntary muscles from often slight and transient morbid impressions, is the same state as that which writers on convulsive diseases have endeavoured to represent by the expressions morbid nervous mobility or excitability—nervous debility, etc.

But, even should the truth of the foregoing propositions be fully and universally recognized, this would advance us but a step or two in our acquaintance with the etiology and pathology—the actual causation and true nature of any of the diseases attended and characterized by convulsive seizures. It would be very far from covering the entire ground embraced in the philosophy of these diseases. The questions would still present themselves for solution: Are they dependent in all cases upon a morbid impressibility of the nervous system without actual disease? Are they ever the result of a diseased condition of any portion of the nervous centres, and if so, what is the nature of that condition? Can they be produced by certain abnormal irritations acting upon a nervous system, neither diseased in any part nor morbidly sensitive to impressions made upon it? What is the relation existing between the convulsive seizures and certain morbid phenomena with which we find these seizures associated in certain cases? and what is the nature and causation of those phenomena? Thus, we find that, in reference to the most important circumstances, in a practical point of view, connected with the pathology of convulsive diseases, we remain still in utter ignorance, and, until that ignorance is removed, it must be evident that the treatment of those diseases can rest upon no better basis than mere empiricism.

At the very head of the convulsive affections may be ranked epilepsy, as at once their great type, and the key to their interpretation. It owes its pre-eminence to the violence of the paroxysms of general convulsions by which it is characterized—the suddenness of their onset, and the strange and apparently inexplicable symptoms by which they are accompanied. And it becomes the type of the entire list of convulsive maladies from the fact, that it embraces nearly all forms of convulsive movement, from the tetanic spasm to the rapid contraction and extension of the limbs, and the most frightful and extravagant contortion of the features. It must be evident, therefore, that every advance towards the elucidation of its pathology must very effectually clear the way for a correct understanding of the theory of convulsive diseases generally.

The entire phenomena of epilepsy, in many respects so strange, mysterious, and appalling—the comparative frequency of the disease, and its melancholy results when violent or protracted, have all tended to render it

the subject of close and anxious investigation on the part of some of the ablest physicians of the past and present times. Although each successive inquirer, in common with those who have preceded him, has failed to reveal its true pathology, still, every year new inquirers come to the work with increasing confidence that each new advance which is made in our knowledge of the physiology of the nervous system will render them more successful in their efforts to remove from the character and nature—the seat and causation of epilepsy, the mystery in which they are still enveloped.

Among the many treatises on epilepsy which have appeared within a recent period, the two whose titles are given at the head of this article are among the most complete and interesting—the fullest and most accurate in their analysis of the phenomena of the disease; the most consistent and satisfactory in their exposition of its pathology; the most philosophical in their development of the therapeutic principles upon which its successful treatment, as well curative as prophylactic, must be based; and the most clear and definite in their teachings with respect to the measures, remedial and hygienic, by which those principles are to be carried out in practice.

We apply to both these works the same general terms of commendation. Though in some respects they differ widely from each other, still their authors have unquestionably dealt with the leading circumstances bearing upon the disease of which they treat with great clearness and ability. They both arrive at nearly the same etiological, pathological, and therapeutical conclusions, though expressed in somewhat dissimilar terms, and arrived at from somewhat different premises. In many respects the treatise of Dr. Sieveking may be pronounced, perhaps, superior to that of Dr. Radcliffe. The former confines his investigation within a narrower compass, directing it exclusively to the subject of epilepsy and epileptic seizures, while the latter takes in the entire list of convulsive diseases, and devotes fruitlessly, also, a large portion of his work in the exposition of a theory of muscular motion, which can never, we are convinced, be generally received.

The question as to the proper treatment of epilepsy is discussed with very great ability, certainly, by both authors. We think, however, that the examination of the question, as presented by Dr. Sieveking, will be found to be the most full, explicit, and philosophical of the two—and to take more into consideration the modification of remedies demanded by the varying features presented by the disease in different patients—by the circumstances of age, condition, and habits in its subjects, and by the date of the attack; having a due reference, also, to the moral and hygienic conditions that are calculated to counteract or concur with the efforts of the physician to prevent or eradicate the disease.

The peculiar characteristics of the epileptic paroxysm or seizure, which has given to the disease its name, and has been by many looked upon, apparently, as constituting the entire morbid condition present in those in whom it occurs, are so perfectly familiar to every physician that it is scarcely necessary to enumerate them. In every description of epilepsy is noted the sudden occurrence of the fits—usually with a shrill, appalling scream—the patient being at once dashed to the ground, when spasmodic contractions of the voluntary muscles at once ensue, and quickly pass into violent convulsive distortions, attended with entire loss of sensation and consciousness. Nearly all authorities agree that, in many instances at least, the accession of the fit is immediately preceded by a transient sensation of a peculiar character, which admonishes the patient of what is about to occur. We need only add, that after a period, varying from ten to twenty minutes,

the epileptic paroxysm usually subsides, profuse perspiration ensues, consciousness returns, and the patient is restored to comparative health. The fit being ordinarily followed by considerable drowsiness, terminating in a deep, natural, refreshing sleep.

Although there is a very great uniformity in the general character of the epileptic fit, as it is observed in different cases, still its individual features will often vary in the frequency of their occurrence as well as in their intensity; and as it is well known that the several affections of the nervous system are liable to merge into each other, the diagnosis between epilepsy and other closely allied diseases, particularly at its commencement, may occasionally be attended with some difficulty.

A most admirable analysis of the several phenomena, the concurrence of which constitutes the epileptic paroxysm, with the view to determine their relative value and frequency, is presented by Dr. Sieveking. From this analysis it will be seen that the convulsive paroxysm of epilepsy varies very considerably in regard to the presence and prominence of certain of its features—especially in the character, degree, and location of the convulsive movements. These are found to pass through every change, from the spasm of an individual muscle to the most violent agitation of the entire voluntary motive apparatus of the body.

"In many cases," says Dr. S., "nothing but a slight spasm is perceptible about the muscles of the neck, in others nothing but a contraction of the fingers or toes—the carpopedal contractions of authors—indicates the nature of the seizure, or the eyes only are peculiarly affected, or, again, a close observer is able to detect nothing of a spasmodic character, and the inference of the case before him being epileptic might be unsafe, unless in the same individual more decided epileptic seizures had been previously manifested, or unless he found that the symptoms were identical with those observed in other instances where the epileptic nature was undoubted."

The abnormal sensation by which the fit is often ushered in, and which Dr. S. considers to be improperly described as an aura, or draught, or current, is present in perhaps one-half the cases of epilepsy, according to the experience of Dr. S.; so far as our observations on this point go, however, it is much less frequent. The same patient may be sensible of it in some of his attacks, but not in others. This we have known to happen in repeated instances. The sensation preceding the fit, when it does occur, varies greatly in its character, and in a few cases it has been found to be sufficiently curious and bizarre. According to Dr. S., the various premonitions of the epileptic fit may be readily arranged in two classes, namely:—

"Those that are referred to the trunk and extremities, and those that appear at once to affect the head. In the former case, the sensation is always described as mounting towards the head, and in the majority of cases the paroxysm appears to strike down the patient on its reaching that part; in the latter, the sensation commonly takes the form of some strange illusion, which, however, the patient is able to recognize as such."

The two classes of sensations, above referred to, are in all probability connected with the centric or eccentric origin of epilepsy.

Although insensibility is almost invariably recognized as an essential feature of the true epileptic paroxysm, yet it has been shown by Dr. S. that convulsive seizures, with all the other characteristics of epilepsy, do occur, in which a certain amount of consciousness is retained throughout. This has been regarded by some as an indication that the convulsive paroxysms

are dependent in such cases upon a local rather than upon a constitutional affection.

Cases of epilepsy are related by respectable authors in which the convulsive movements were limited to a small number of muscles—those of a single limb for instance. The propriety of considering such cases as examples of genuine epilepsy, may, in our opinion, be very properly doubted.

The trachelismus, upon which Dr. Marshall Hall bases the entire theory of the disease, Dr. S. admits may take place, but he considers it to be of secondary importance to other morbid conditions present during the convulsive paroxysm.

"While," he remarks, "it would be impossible to deny that spasm of the muscles of the neck, the platysma, sterno-cleido-mastoid, scaleni, and trapezius more particularly, materially affects the circulation of the blood in the vessels of the part, the literal interpretation and careful observation of all the symptoms of epilepsy will not allow of our regarding this as more than a small part of the phenomena. The experiments of Sir Astley Cooper show that compression of the arteries leading to the head may induce epileptic seizures in animals, and while there is ample pathological evidence to show that morbid conditions, inducing compression of the vessels of the neck generally, are frequently associated with epilepsy, cases of an opposite character are not wanting in the history of medicine."

The condition of the pulse during the epileptic paroxysm is without any very positive pathognomonic significance. Dr. S. has found its prevailing character, in the majority of cases that have fallen under his observation, to be the same as is met with in subjects deficient in blood and tone.

"It is generally much accelerated, feeble, and soft. In cases exhibiting more of the sanguineous and florid type, the pulse may present no variation from the normal character. The same will probably be the case when the attacks have only commenced recently, or occur at long intervals. The more frequent they are, the more perceptible will be the derangement of the circulation; but in no case does it appear that even prolonged cases of epilepsy exercise any definite influence upon the central organ of the circulation. Nor can any causal relation be traced, such as exists between chorea and morbid conditions of the heart. In short, the manifestations of any influence of epilepsy upon the circulation appear to be confined to such effects as may be found in any circumstances which at once enfeeble the individual while they excite the circulation."

The frequency with which the paroxsysms occur varies greatly. They are, at first, generally separated by intervals of several months, but gradually the intervals become shortened, until the paroxysms may recur daily, or many times each day. Their occurrence is never marked by anything like regular periodicity, though sometimes, in the female, they would appear to bear an evident relation to the catamenial periods. Such periodicity, as Dr. S. very truly remarks, even were it uniformly observed, can scarcely be said to constitute a feature of the epilepsy; the semblance of periodicity is due to the induction of the convulsive seizure depending upon another condition which is in its nature of a periodical character.

Sleep would appear to excite the epileptic fit, from the physiological effect which the state of somnolence exerts upon the brain. All, however, it appears to us, that facts will bear us out in asserting is, that there is "a peculiar proclivity in some epileptics to nocturnal seizures." In the cases observed by us, the seizure took place very frequently at night, but certainly not more so than during the daytime, when the patients were awake, and often when they were engaged in some occupation.

The epileptic paroxysm would appear to occur with pretty nearly equal

frequency throughout every season of the year. In our own experience we have certainly found them to be most frequent, however, during the warmest and the coldest months.

Headache is considered by Dr. S. as bearing a close relation to the epileptic fit, and as of momentous import in reference to the pathology of the disease. Headache occurring immediately after the convulsive paroxysm is often, it is true, simply the effect of the latter; but when headache is experienced by the epileptic habitually, or when it precedes the convulsive seizure, it has a much more important and serious significance. Habitual headache Dr. S. has observed to be, in many instances, an indication of a strong predisposition to epilepsy, or to occur, possibly, in a subject in whom the epileptic paroxysm has been manifested merely by slight vertiginous attacks, by a single attack in former times, or by some spasmodic action that alone would not be regarded as of an epileptiform character. The pain in this form of headache may affect any part of the head, but it is frequently limited to a spot at the vertex.

Generally, the epileptic fit is followed by a state of somnolency. "Instead of the sleepiness, we sometimes observe a state approaching to or constituting actual delirium—or the same patient at one time sleeps a long time after the fits, and then a period comes when he or she is delirious for several hours after the paroxysm has gone off."

"This," to complete the history of the progress and end of the whole affair, in the beautiful summary of Dr. Radcliffe—

"This is the usual, but not invariable course of the fit. Indeed, the attempts at rallying may be very imperfect, and fit after fit may recur for a long period without any interval of waking, or all rallying may be prevented by death.

"—— After waking, there are generally some symptoms of reaction in the circulation; but in simple epilepsy these are never very marked. They may be enough to give a dull flush to the cheek and add a little fulness to the pulse, for a short time after the patient wakes; but, as a rule, these symptoms cease when the coma ceases, and the coma is never much prolonged in simple epilepsy. Usually the patient is headachy and exhausted, listless and stunned, moody and irritable, until a night's rest has enabled him to recover the balance of his shaken nervous system. The faded countenance also tells plainly of the past struggle, even though it may present none of those numerous and minute dots of ecchymosis about the eyelids and upon the forehead, which are such unequivocal signs of a severe attack of epilepsy.

"As time goes on, the mental faculties recover more and more imperfectly, and more and more tardily, and at last their habitual state may be one of pitiful fatuity, from which no single ray of the divine principle beams forth. Or the moodiness and irritability which follow the attack may become more and more marked, until at last they merge into attacks of downright mania. Or symptoms of paralysis may make their appearance; or death may happen in a fit or shortly afterwards. The natural tendency of epilepsy is assuredly towards dementia; and dementia is the final doom of the epileptic, if his disorder be unchecked, and life prolonged sufficiently; and this equally, whether symptoms of insanity have or have not been developed; but, at the same time, it is possible for an epileptic to have many fits, and live many years, without ever losing the powers which are necessary to render him an agreeable and serviceable member of society. If death happens, it happens most generally from exhaustion in the period of prostration immediately following the paroxysm."

The great error that has been committed in investigating the pathology of epilepsy, has been the restricting of attention too exclusively to the convulsive paroxysm, overlooking the morbid phenomena present during the intervals, as indicating a permanently abnormal condition of certain organs,

as that constituting in a proper sense the actual disease, and of which the convulsive seizures are but one of the symptoms. Or, when the morbid phenomena that exist in the intervals between the convulsive seizures are recognized, viewing them as mere effects of the paroxysms, rather than as the results of the same morbid conditions that produce the convulsive seizures themselves. As Dr. S. has well observed, it is impossible to arrive at a correct appreciation of the epileptic paroxysm so long as it is studied separately from the intervening periods or so-called free intervals. He has, therefore, with great care, investigated the condition of the epileptic in the intervals between the paroxysms, and accurately noted the morbid phenomena which are then most generally to be met with. They will be found to be such as are universally recognized to be indicative of more or less disturbance of the cerebro-spinal functions.

A single epileptic seizure may occasionally take place, and pass away never to be repeated, and if we are correct in considering the convulsions of infancy as truly epileptiform, single non-recurring paroxysms are of much more frequent occurrence than Dr. S. would seem willing to allow. It is very certain that a very strong relationship exists between the convulsions of infants and true epilepsy—if the two be not, in a strict pathological sense, identical. The proof of this is found in the fact that those who have been during infancy subject to repeated convulsive attacks, are among those most prone to epileptic seizures in after life.

The more frequent the epileptic paroxysms recur, the more marked will be the morbid phenomena which occur in the intervals; still, as Dr. S. remarks, a careful observer will rarely fail to discover a certain peculiar deviation from health in all epileptic patients—even in those whose convulsive seizures occur only after very long intervals.

"There will be the characteristics of a nervous diathesis; an excitable, frequently irritable, manner; a restless eye; a quick but feeble pulse; more or less difficulty in collecting the thoughts, and connecting the different links of mental association, while, at the same time, one or other of the organic functions presents a palpable deviation from health: the organs that are more particularly under the domain of the sympathetic ordinarily show that they are deficient in vigor, that they want that stimulus which the vascular and nervous systems supply when the individual enjoys robust health."

The symptoms most commonly present in epileptics during the intervals of the fits, are constipation, eructations and flatulence; enlargement of the pupils; occasional vertigo; anomalous sensations in different parts of the body; more or less habitual headache, with or without vertigo; slight partial spasmodic seizures, giving rise more especially to a distressing sense of suffocation or choking.

Epileptic vertigo, as well as epileptic headache, is described by Dr. S. as often existing for a long time—many years perhaps—before the occurrence of an epileptic seizure. Frequent, brief attacks of vertigo, and semi-unconsciousness, occurring in the intervals of the convulsive paroxysms, are always to be viewed as symptoms of very serious import. They are often conjoined with failure of memory, difficulty of articulation and dysphagia.

Subsequent to the paroxysm, temporary paralysis of a part, or of the entire body may remain; when partial, giving rise, in some cases, to stammering, or to distortions of the hands or feet. These latter phenomena may even become permanent.

The epileptic, long before actual idiocy sets in, will in most cases have an expression of hebetude—a peculiar heaviness about the eyes; a pasty,

leaden, or livid hue of countenance; puffiness of the face, and a thickness and coarseness about the lips, with often a constant dribbling of the saliva from the mouth. The peripheral circulation is sluggish, hence epileptics are chilly and liable to coldness of the extremeties.

As to the immediate cause of death in epilepsy nothing satisfactory can be affirmed. Dr. S. points out, however, the frequency with which the fatal event is associated with symptoms of an apoplectic character.

With respect to the causes of epilepsy, everything is involved in doubt and obscurity. Upon this subject the most opposite opinions have been entertained—diametrically opposite observations have been adduced, and the most loose and discordant statistics appealed to.

Dr. S. thinks it probable that in the production of the first onset of the epileptic paroxysm both a predisposing and an exciting influence invariably concur. It is very certain that all those circumstances which have been observed to predispose to the disease may be present without the occurrence of an epileptic seizure, while, on the other hand, individuals have been fully exposed to the same influences which have been known to induce the epileptic paroxysm in others, without their becoming epileptic. When, however, a seizure has once taken place, it will usually be reproduced under much more trivial circumstances than brought it on in the first instance—often, indeed, without any recognizable exciting cause.

"The great bulk of the evidence," Dr. S. remarks, "is in favour of the view that the predisposing influences enfeeble the body, and more especially the nervous system. The disease is regarded by the great majority of authors, past and present, as one of debility, and the influences that induce it are such as would weaken the individual, and expose him to the reception of noxious influences of all kinds. Hence we may assume something more than the predisposing influences, commonly so called—namely, a peculiar habit of body, which we are certainly unable to define, but which, for want of a better term, may be called a nervous diathesis."

Epilepsy is a disease common to all climates, and all countries. It affects alike individuals of all conditions of society, of both sexes, and of every age of life, and apparently of all races and peoples.

That the disease, though usually of sporadic occurrence, has occasionally prevailed in an epidemic form, there seems to be little doubt. In the histories handed down to us of the convulsive epidemics of the middle ages, the epileptiform character of many of them is easily recognized, while by physicians of the present century we are furnished with accounts of similar epileptiform epidemics, as that of Teheran, in India, in 1842, described by C. W. Bell, in the *Medico-Chirurgical Transactions*, and the peculiar "epidemic epilepsy" which prevailed in Kentucky previous to 1805, and accurately described by Dr. Sutton, in the last volume of the *Transactions of the American Medical Association*.

Whether males or females are the most frequent subjects of epilepsy, is a question in respect to which there exists no little discrepancy of opinion. Our own observations, and the statistics we have been enabled to collect from other sources, show a decided preponderance of male over female epileptics. This would appear to be in accordance with the observations of nearly all the continental authorities excepting the French.

There can be no doubt that the period of puberty is that at which the invasion of true epileptic paroxysms most frequently takes place, unless, as we believe would be perfectly correct, we recognize the convulsions of infants as epileptic, when the period of dentition would be strictly that at which the invasion of the disease most frequently occurs.

Dr. S. sets down hereditary influence as an evident predisposing cause of epilepsy. By Herpin, Moreau, and some others, the attacks of every variety of nervous affection in parents is included among the hereditary influences to which epilepsy is often traceable. The fact, however, may be more correctly stated, perhaps, by saying that the offspring of those who have suffered from nervous diseases, inherit a peculir condition of organization which predisposes them to the occurrence of the same class of affections, including, of course, epilepsy.

Whatever relation may be supposed to exist between an albuminous condition of the urine and the epileptic convulsions incident to the pregnant, parturient, and puerperal female, with which it is so commonly associated, it is very certain that no such relation exists between albuminuria and epilepsy as it generally occurs, inasmuch as no uniformity can be traced between the presence of albuminous urine and the occurrence of epileptic seizures in the male and in the unmarried and non-puerperal female.

"Albuminuria," Dr. S. remarks, "when present, by impoverishing the blood, or by the coincident relation of urea in the blood, may, and frequently does, nevertheless, appear to cause epileptic seizures; but in the great majority of cases of epilepsy, no palpable derangement of the renal secretion can be detected."

An impaired state of the digestive organs, and more or less derangement of the intestines are very generally present throughout the entire course of epilepsy. Frequent disturbance of these organs may probably in some instances lay the foundation—act as a predisposing cause of the disease. The entire assemblage of stomachic and intestinal ailments so generally observed in epileptics are to be viewed, however, in most instances as indications of that general condition of impaired health upon which the predisposition to epilepsy properly depends.

One of the most frequent causes of epilepsy in the male is unquestionably masturbation. In the female it may also be traced to the practice of self-abuse, but much more rarely. In her, epilepsy has a more marked relation to derangements of menstruation—some degree of which very generally attends the disease. Such derangements, however, as Dr. S. very truly remarks, "may not be regarded in any other light than as indicative of a general derangement of the system, coincident with the epileptic paroxysm, and though not causing, yet favouring, its occurrence."

Dr. S. says nothing in respect to the predisposition to epilepsy generated by the intemperate use of intoxicating drinks; in the course of our experience we have certainly found the drunkard to be particularly prone to epileptic seizures. In one hundred and eleven cases of epilepsy, the histories of which we have collected, thirty-one were clearly traceable to intemperance.

Epilepsy is a frequent consequence of premature synostosis of the cranial sutures and fontanels. Although this has been shown to be the case by Müller and other of the German writers, and by one or two English observers, it is not noticed by either of the writers, whose works are before us. The subject will be found to be fully discussed in a paper by Dr. Jacobi, in the volume of "Contributions," noticed in the present number of this Journal.

In a large number of instances no particular circumstance can be fixed upon as the exciting or immediate cause of the epileptic paroxysm. Among the most frequent of the exciting causes, have been enumerated fright and fear, intense mental application and excitement, intense mortification, vio-

lent anger, inordinate joy, prolonged intense anxiety, the unexpected receipt of good or bad news, the onset of fever, of smallpox, etc., teething, difficult menstruation, falls from a height, blows on the head, insolation, sexual indulgence, etc.

Although it is very certain that the epileptic seizure may be brought on by suddenly excited, intense mental emotions, and perhaps, also, by various purely physical impressions; as well as by certain pathological occurrences—anything in fact that shall induce a direct morbid impression upon the nervous centres, or an irritation in some remote part or organ reflected upon the brain and spinal cord, still there is some doubt as to the actual efficiency as exciting causes, of many of the circumstances enumerated as such. As Dr. S. remarks, no one of the conditions which in some individuals would appear to be the immediate agents of the epileptic fit, are found to be generally or necessarily so; they occur very frequently in other individuals without giving rise to any form whatever of spasmodic disease.

In many of the cases of what has been termed the eccentric form of epilepsy the importance of ascertaining the exciting cause of the attack is rendered evident by the fact that when this has been detected and removed the epilepsy has ceased.

"It would appear," says Dr. S., "more in consonance with observed facts to regard epilepsy as an affection invariably dependent upon some hitherto unexplained derangement in the nervous system, often dormant for years, and even for life, unless the exciting cause comes into operation. If this view be correct, a distinction between essential and non-essential epilepsy cannot be said to exist; but wherever a paroxysm has occurred, we should assume the same peculiarity of the nervous system to prevail in a stronger or feebler degree, and the difference would be mainly in the agent which roused this susceptibility into action. To revert to a former simile, the diathesis may be compared to combustible material of greater or less inflammability, which differs in the facility with which it will take fire, but will infallibly do so if a flame of sufficient intensity is brought into contact with it. Protect it from the flame, and the combustion will not take place. The same we constantly find to be the case in epilepsy; remove the exciting cause, and the fits will remain in abeyance, allow the flame to be approximated, and the combustible mixture in your patient's system will certainly take fire, the proximity necessary for the purpose constituting the main difference between two different subjects. I have seen this so frequently, that it is one ground why I would specially warn the young practitioner who acts upon these views from placing undue reliance upon the medicinal agents which he prescribes while giving other directions in consonance with the views just detailed. Thus I have again and again found that a continuance of the same active and restless mode of life pursued by a patient at the time of consultation prevented the pharmaceutical appliances from producing a satisfactory result. The patient has then been placed in other circumstances, or has withdrawn from the previous avocations, allowing body and mind the proper rest, and the exciting cause being withdrawn, the nervous system had time to recover its tone, and if not a permanent, still a temporary cure was the result—a cure to all intents and purposes, because it was shown that the epilepsy was under the control of external influences."

Prominent and characteristic as are the phenomena of epilepsy, morbid anatomy has failed in the detection of a single uniform lesion, whether of the cerebro-spinal axis or other organ, by the presence of which the functional disturbances which attend the disease could be satisfactorily traced to certain definite organic changes.

It is impossible, Dr. S. observes, to overlook the manifest relation which the state of nutrition and the blood exercises upon the nervous system in the

production of what are denominated nervous symptoms in disease; and of all the influences that we can trace in the production of epilepsy, we see none that operate so frequently as those which are connected with some derangement of nutrition. And yet there is no definite change in the excretions which can be shown to be a uniform accompaniment of epilepsy.

Many patients who have died after suffering for a long period from epileptic disease, present upon dissection various lesions, particularly of the brain—such, however, is far from being uniformly the case, and when it does happen, no definite relation between the lesions that are present and the epileptic phenomena can be traced. Similar lesions also have been detected in the body of such as never exhibited, during their entire lives, any epileptic symptoms.

Among the lesions that have been most frequently detected in the bodies of epileptics may be ranked perhaps hypertrophy and increased density of the brain. These morbid conditions, if any confidence is to be placed in the observations of M. Ferrus, are invariably present. Another very frequent lesion, according to Dr. Boyd, of England, is a want of balance between the weight of the two cerebral hemispheres. It was present, he informs us, in nearly all the cases he examined post-mortem. If the observations of Dr. Wenzel, of Mayence, were accurately made and are correctly reported, a diseased condition of the pituitary body and pineal gland is also to be viewed as at least a very frequent, if not an invariable lesion in cases of epilepsy. Dr. Wenzel found it to be always present in the epileptic, he does not pretend to say, however, that its presence is invariably attended by epilepsy.

A very excellent analysis of the various post-mortem appearances that have been detected in the bodies of epileptics is given by Dr. Sieveking, together with an inquiry into the probable relation of these lesions with the predisposition to, and actual induction of the epileptic paroxysms, and with the various morbid phenomena exhibited during, or in the intervals of the paroxysms.

We now come to the important question, what is the true theory of epilepsy? The answers which Drs. Sieveking and Radcliffe give are, though dissimilar in the terms in which they are expressed, pretty nearly the same in substance; both consider the disease to be produced by causes which impair the healthy condition of the blood, and augment the susceptibility of the nervous system to the impression of abnormal impressions. Both recognize epilepsy as an affection of the encephalon, and especially of the sensory ganglia, with secondary implication of the spinal cord. The control of the brain, according to Dr. S., being withdrawn, the spinal system acquires a preponderating action, as shown in the spasmodic action of various muscular terminations of spinal nerves. With Dr. Radcliffe the condition of the brain and spinal cord are alike due to a deficient supply of arterial blood, and according to a theory of muscular action adopted by him, the convulsive movements of epilepsy are caused by a failure in the supply of "nervous influence" to the affected muscles, in consequence of a failure in the action of the nervous centres.

It will be impossible for us to present any more than a brief outline of the views advanced in the two works under review, in respect to the pathology of epilepsy, and this we shall endeavour to do, as far as possible in the authors' own words.

Dr. Sieveking believes that, in the great majority of instances, the first attack of epilepsy is due to an irritation produced by derangement in the

amount or quality of the blood circulating in the brain. In a person predisposed we frequently find, he remarks, over-fatigue, a long walk, carrying heavy loads, prolonged mental exertion, the manifest cause not only of the first, but of many succeeding seizures.

In respect to the repetition and perpetuation of the disease, Dr. S. observes:—

"It is a fact familiar to every medical man, that an individual part which has once manifested a peculiar susceptibility is prone to take on diseased action again, and that a frequent occurrence of disease in a part renders treatment more difficult at each succeeding attack."

"In a disease like epilepsy, habit plays an undoubted and very important part. Every successive attack strengthens the habit, and renders the individual more obnoxious to future seizures; every arrest or postponement of a seizure is so much gain in favour of the patient, not only by avoiding the pain and risk of the isolated paroxysms, but still more by diminishing his future liability to the disease. Believing, as I do, that wherever we meet with epilepsy there is the same fundamental weakness of the cephalic nervous centre, and that, by repetition of the attack, the same ultimate results may be brought about, whatever the exciting cause may have been, the necessity of seeking by every means in our power to weaken, if we cannot succeed in breaking, the strong links which constitute habit, becomes an imperative law for the physician."

"In considering the theory of epilepsy," Dr. S. continues, "its relation to other diseases, and especially to those of a spasmodic character, must be borne in mind. There is much and powerful evidence to show that epilepsy belongs to a group of affections which are closely allied to one another, and hence exhibit many transition forms which have given rise to confusion in the minds of medical men. The eclampsia of early childhood, laryngismus, or spasm of the glottis, may be especially mentioned as belonging to the same category as epilepsy. The main reason why, in infants, the convulsive character is not so prominent as in children of a larger growth, would seem due to that very impressionability which gives rise to the nervous symptoms on a comparatively slight stimulus. Their muscles and the spinal nerves have not reached that period of robust development which maintains later; whilst the slightest interference with the organs of respiration, dependent, as in the cases adverted to, upon spasm in the superficial or deeper seated muscles of the neck, causes loss of consciousness. We constantly see the gradations from the merest crowing inspiration, to the most confirmed convulsive seizure in the same infant, while the recurrence of the well-marked epileptic seizure in the adolescent or adult is preceded in a sufficient number of times by infantile fits to justify the assumption of a close relation between the two."

With respect to the experiments of Dr. Brown-Séquard and his deductions from them in reference to the pathology of epilepsy, Dr. Sieveking remarks, that the seizures that were induced in them appear to have borne more the character of tetanus than of epilepsy. Such a state of hyperæsthesia as occurred in the animals operated on, Dr. Sieveking denies to be a feature of epilepsy in the human subject, in whom the evidence, to his mind, shows irrefragably the brain to be the organ primarily involved—the phenomena of the disease would seem, indeed, to show that it depended essentially on a deranged condition of cerebral nerve power, and to negative the supposition of its connection with spinal lesion.

The state of the blood, Dr. S. believes to exercise a material influence in the production of epilepsy. He thinks that the close alliance between epilepsy and scrofulous affections points in this direction, while, in the great majority of cases, circumstances have preceded the outbreak which notoriously tend to impoverish the blood, and exhaust both the vascular and nervous power.

"But," he adds, "although the disturbed polarity which induces the paroxysm most frequently depends upon exhaustive conditions, so much so that some writers, among whom I would specially mention Dr. Radcliffe, regard this class of causes as the sole indication for treatment; I am satisfied that the state of the blood need not necessarily be impoverished, but that various pathological conditions of the blood may be associated with the epilepsy."

Dr. S. believes that the immediate cause of the epileptic seizure may be a preternatural influx of blood upon the brain; he supposes, nevertheless, that, in the vast majority of cases, the patients are in a condition indicating a state of general anæmia, or a dyscrasic state of the circulating fluid.

"A state not certainly always, or even generally, to be measured by a physical standard, but no less recognizable by the physiological tests—the state of the skin, the eye, the tongue, the pulse, the stomach, the intestines, the mental functions. In most acute diseases, even, that we have to deal with, we find that a predisposition is generated by previous debilitating influences—intemperance, debauchery, scrofulous or syphilitic taint, hereditary lithiasis. Such influences necessarily deserve equal attention in a chronic and periodic affection like epilepsy; and it is impossible to disconnect such influences, even in a disease so peculiarly in the domain of the nervous system, from a blood-lesion."

Dr. Radcliffe believes that from defective action in the excretive organs, a diseased condition of the blood will be produced, which may concur in bringing about an attack of epilepsy. He believes that in every case of the disease there is a want of vigour in the circulation. That during the paroxysm there is impeded respiration, and an overloaded condition of the venous system generally. This condition of things being assumed, the inference deduced by him is, that the convulsive seizure is intimately connected with the want of a due supply of arterial blood to the cerebro-spinal centres. He denies that either venous congestion or arterial injection of the brain are in any way concerned in the production of epilepsy.

"No doubt," he remarks, "the veins of the brain and head generally are congested from a very early moment, but there is a moment antecedent to this, in which the death-like paleness of the face, in many cases at least, is a sufficient proof that the veins were emptier than usual before they became congested. Indeed, it may be supposed that this was the case in the majority of instances, if not in all, for there would seem to be no way of accounting for the instantaneous loss of consciousness and sensibility (which is in reality the first phenomenon of the fit), except upon the supposition of some sudden failure in the supply of blood to the great nervous centres. At any rate, the well-known anatomical difficulty is not the sole difficulty which has to be overcome before it can be supposed that Dr. Marshall Hall's hypothesis of *trachelismus*, or the prevention of the return of blood from the brain by the spasm of certain muscles in the neck, has anything to do with the causation of epilepsy."

Deficient activity of the nervous system plays, according to Dr. R., a most important part in the production of the disease. During the convulsion the state of the brain he sets down as one of coma. That is to say, during the convulsion, the state of the brain, regarded mentally, is one of extremest inaction. Such is also, he maintains, the condition of the medulla oblongata, the spinal cord—every portion, in fact, of the nervous centres. The morbid irritability of the muscular system—that state in which the muscles are said to be more apt to contract when irritated, and more prone to remain contracted when once they have contracted—is, according to Dr. R., dependent upon a deficient supply to them of nervous influence.

"There is then," he remarks, "no necessity to look upon this morbid state of irritability as an evidence of the existence of any peculiar condition in some

part of the nervous system, for thus interpreted, it only signifies a state in which the muscles are ill supplied with nervous influence. Thus interpreted, indeed, morbid irritability only becomes another name for inefficient action of the nervous system. The pathology of epilepsy, therefore, as deduced from a consideration of the phenomena belonging to the nervous system is in harmony with what had been already deduced from a consideration of the phenomena belonging to the vascular system, and the conclusion is precisely what was to be expected from the previous investigations respecting the physiology of muscular action. From these previous investigations it was to be expected that coma and convulsion might go hand in hand together; for muscular contraction, according to these investigations, is to be looked for when a failure in the action of the nervous centres causes a failure in the amount of nervous influence distributed to the muscles."

To understand fully the pathology of epilepsy advocated by Dr. Radcliffe, it will be necessary to inform the reader that, agreeably to the physiology of muscular motion adopted by him, *muscular contraction* is not the result of the *stimulation* or excitation of any property of *contractility* belonging to the muscle. That by the simple physical action of certain agents—electricity, irritation, nervous influence, etc., *muscular elongation* is produced; *muscular contraction* being simply the *physical consequence of the cessation of such elongation.*

However accurately the theories of epilepsy advanced by Drs. Sieveking and Radcliffe may be admitted to depict certain of the morbid conditions which concur in the production of the disease; however correctly they may be found to explain certain of the links in the chain of causation upon which the morbid phenomena exhibited by the epileptic patient from the period of his first seizure until the termination of his disease or of his life, depend; they cannot be received as affording a full and satisfactory solution of the entire pathology of epilepsy, the nature of the lesions upon which the disease depends, and why those lesions give rise to the particular morbid phenomena pathognomonic of it. For such light, however, as they are adapted to throw upon these interesting questions, small as this may be, the views advanced in the works before us, with the facts and arguments by which the accuracy of those views are attempted to be proved and enforced, deserve the notice and careful study of every physician.

A leading—perhaps the most important—result the physician hopes to derive from the discoveries he may be enabled to make in regard to the actual seat and character of the lesions upon which any given disease depends, and the causes to which those lesions owe their existence, is to enable him to fix upon the means best adapted for its prevention or its cure. We fear, however, that, in the case of epilepsy at least, no such result can be rightfully claimed for any of the theories, including those advanced in the two works before us, that have as yet been published; and that so far from its treatment being prompted and guided by an exact knowledge of the etiology and pathology of the disease, our acquaintance with its appropriate prophylaxis and treatment must still be acquired empirically.

If, as was laid down in the commencement of the present article, and the truth of the proposition is substantially admitted by Dr. Sieveking, epilepsy be viewed as an affection dependent upon a certain morbid condition of the nervous system, which renders it liable to act abnormally when subjected to certain causes of irritation which, in the absence of that morbid condition, exercise upon the nervous system no such influence, then the general indications to be pursued in our endeavours to prevent or cure the disease, are sufficiently clear. It must be, evidently, the leading aim of the physician

to prevent or remove the abnormal condition of the nervous centres, and to guard the patients from the sources of the irritation which is found to act as the exciting cause of the epileptic seizure. But though the means by which these objects are to be effected may be shrewdly conjectured, they can be ascertained only by a course of clinical experiments—by the results simply of experience.

We need not stop to inquire what the authors before us lay down as the proper treatment during the epileptic convulsive paroxysm. In no case can it be more than negative, and directed solely to guard the patient from injuring himself, or being injured by the convulsive movements of his muscles, and to abstract everything within our control, that may have a tendency to aggravate the fit, or impede its speedy cessation.

Romberg, Pritchard, and a few others, speak of compression of the carotids as a means of warding off a threatened paroxysm, and of producing a temporary relief of its violence, when present. From the decided testimony borne by Dr. Parry in regard to the beneficial effects of compression of the carotids in allaying pain of the head, sleeplessness and excitement in cephalic diseases generally, Dr. S. concludes that the operation is certainly deserving of an extended trial, inasmuch, "as the postponement of a fit, or even diminution of the severity of the paroxysm is a gain."

Dr. Radcliffe believes, on the other hand, that the evidence offered in favour of the measure is both scanty and inconclusive, and might be easily frittered away by any one who is disposed to be sceptical.

When the paroxysm is preceded by an *aura*, it is asserted upon the best of evidence that if this be, by any means, arrested before it mounts to the head, the accession of the epileptic fit will be prevented. Binding a ligature firmly around the limb in which the premonitory sensation referred to is experienced, between it and the brain, has been found, we are assured, effectually to ward off for the time being an impending paroxysm. The removal of a testicle, of a tumour along the course of a nerve, or of an entire limb along which the aura has been known to proceed, is said to have frequently effected an entire cure of epilepsy. Removing by the trephine a portion of the skull over any part of the brain ascertained to be suffering from mechanical irritation of any kind has, also, it is reported, resulted in the entire arrest of the disease. To such cases, however, undue weight should not be given. We are to recollect that, in very many instances the operations referred to have been performed, and by them supposed offending parts have been removed, without the slightest beneficial results.

So far as we are able to judge from the recorded experience of the medical profession in reference to the subject, the exhibition of no article included in either of the classes of remedies which make up our lists of the materia medica, has been found to exert any more than a very uncertain and limited control over the violence or frequency of the epileptic seizures, and has seldom exhibited any uniform and decided agency in causing their entire suspension.

A preliminary measure essential to the success of whatever treatment we may adopt for the cure of epilepsy, is the removal of the patient from the influence of all those circumstances, so far as they can be detected, and are under our control, which may act as predisposing or exciting causes of the disease, whether of a mental, moral, or physical character; while at the same time, by a well-selected, nutritive, and invigorating diet, pure air, appropriate occupations, properly regulated exercise, and the cultivation of

cheerfulness, hope, and confidence, we endeavour to improve the nutrition, the tone, and the healthful rhythmical action of the system generally.

Every epileptic should be examined fully, carefully, cautiously, as to his predisposition to disease, and with the view, also, to detect improper habits and vices and indulgences, incorrect modes of living, etc., as well as to discover any morbid condition that may be present in either of the organs of the body, in order that the proper remedies may be applied to counteract and change the first, and to remove promptly the latter. In the general correctness of these views both the writers under review coincide.

"In any case of epilepsy," Dr. Radcliffe remarks, "there is no question as to the necessity of ordering the habits of the patient in such a way as to save the strength as much as possible. There is no question as to the advisability of continence in sexual matters. There is no question as to the advisability of not taxing the brain with severe study. But there may be a question as to the correctness of the rule which is usually laid down with regard to bodily exercise. There would seem to be no ground for supposing that the epileptic had any spare energy which must be worked down by exercise, and, so far, this idea is confirmed by experience. More than once, I have found a patient begin to improve when he became careful to avoid muscular fatigue; more than once I have known a patient begin to retrograde, who began to try his strength too speedily."

Dr. Sieveking says that if he were to formalize the mode of treatment pursued by him, he would say that it consisted in local derivatives, or counter-irritants directed against cerebral congestion, in connection generally with roborants or tonics; the special manner in which the indication had in view in the employment of the latter is to be carried out being based upon the result of the inquiries made into the condition of the individual organs.

Intense and continued headache in the epileptic, whether as a precursor or sequel of the convulsive paroxysm, Dr. S. always meets by counter-irritation to an extent proportioned to the intensity of the symptom. Either blisters to the back of the neck, repeated, or kept open by the application of savine ointment, or setons or issues to the neck, are the means of counter-irritation usually employed by him. Dry cupping he has, also, in many cases found beneficial.

The abstraction of blood may, Dr. S. thinks, be demanded in sanguineous epileptics, residing in the country, but, as a general thing, he joins with those who deprecate bloodletting in those subject to epilepsy. Purgatives, he believes are demanded to remove from the bowels retained feces, or any other irritating matters that may be present in them, and also to restore certain physiological secretions. Mercurial purgatives, and those of a drastic character, he objects to, and advises the selection to be made from among those that are of a warm aromatic character.

"The costiveness," says Dr. S., "of many of our overworked and anæmic patients will be better met by a large dose of quinia, or by nux vomica or its alkaloid, than by a purgative draught. In some cases, possibly, even an opiate or a sedative will more readily induce a regular action of the bowels, by overcoming a spastic condition of the intestinal muscular fibre."

Dr. Radcliffe is opposed to every kind and degree of depletion in epilepsy, whether by venesection or by purgatives. He insists upon the necessity of a tonic and stimulating course of treatment, with a full diet of good substantial food, and a liberal allowance, at the same time, of beer, wine, coffee, etc. Dr. R. concedes, however, to counter-irritants the good effects that have

been ascribed to their use in epilepsy, especially such of them as excite inflammation without being attended by any exhausting discharge. They act, he thinks, not by overcoming congestion, the existence of which he denies, but by withdrawing some morbid irritability from a vital organ. He believes that it is as a counter-irritant, cauterization of the larynx, as proposed by Dr. Brown-Séquard, and practised by Dr. Watson, of Glasgow, and others, does good. The hint given by the first named gentleman, in pointing to the larynx and the locality in which *the aura* originates, as the sites in which the counter-irritation *may be* especially serviceable, Dr. R. believes may prove one of much practical value.

There are times, Dr. R. admits, in which the stimulant and tonic course of treatment must be suspended.

"If, for instance, the urine on cooling becomes thickened with lithates, not only may tonic and stimulant medicines have to be suspended, and the quantity of animal food and beer reduced, but a few grains of an alkaline carbonate, and a few drops, perhaps, of tincture of colchicum—I think I have seen much good from this addition in many cases—may be taken with advantage an hour before breakfast, for a few days in succession. Or, if the bowels become obstinate, it may be necessary to recommend more fruit or salad, more walking exercise, with enemas of cold water or brine, and so on. Or, if the action of the skin flags unusually, it may be well to advise the use of a few warm baths, in addition to the ordinary practice of sponging with tepid water. In a word, any of the many minor changes which are continually happening in the system will have to be recognized and met, and not only so, but no small part of the success in treatment will always depend upon the tact and promptitude with which such changes are recognized and met."

Dr. Sieveking speaks in commendation of turpentine, as a remedy in epilepsy, especially when the disease occurs in females, both on account of its primary action on the intestinal canal, and its secondary stimulating effect upon the uterus, when its regular functions are impaired. We have found equally good effects to result from the use of the turpentine in the male as in the female epileptic.

Dr. Radcliffe also bears testimony to the value of turpentine in cases of epilepsy generally; on account, however, of its nauseous taste, he has usually substituted naphtha, purified by redistillation. The following is a formula according to which he often administers it: ℞.—Naphthæ purificatæ, tr. humuli, tr. valerianæ, āā ʒss; aquæ menthæ pip. ℥ss; aq. destillatæ, ℥j. M. for a dose. When chalybeates are indicated he has sometimes added from five to ten grains of the ammonio-citrate of iron.

As tonics in epilepsy, Dr. S. places the preparations of iron and of zinc at the head of the list, and indicates Allarton's steel biscuits as a very elegant form of administering iron, particularly to young children. They are very palatable, and will be eagerly taken even by the infant.

Of the different preparations of zinc Dr. S. prefers the sulphate on account of its solubility. It is best adapted, he thinks, to cases of what has been termed the centric form of the disease. It may be given in the form of pills combined with extract of gentian, or dissolved in infusion of valerian, or in other combinations indicated by the particular case. The valerianate of zinc and the valerianate of iron present combinations of the bases referred to with valerianic acid, which may be given also with advantage. By cautiously increasing the dose of the sulphate of zinc, the patient can be brought to take it in very considerable doses without any inconvenience.

Dr. Radcliffe has no faith in the anti-epileptic properties of zinc; iron, however, he has used as a fundamental element in the treatment of the

disease, for the last seven or eight years, and with the most encouraging results.

If steel, says Dr. Radcliffe, has done good in epilepsy, it might reasonably be expected that the same result would also be experienced from the use of quinia. It has been employed by several practitioners, among the rest, by Rostan and Piorry, and cases are on record in which the epilepsy is supposed to have been cured by it. Dr. R. has given it without much selection as to particular cases, and scarcely ever, he assures us, if ever, without benefit. He has usually prescribed, it is true, the quinia along with other remedies, but he feels convinced that to it some share of credit is due for the benefit that ensued.

"Among tonics," remarks Dr. Sieveking, "we must not forget to mention strychnia, which, in suitable doses, acts as a general roborant, and diminishes that irritability of the nervous system which prevails in persons subject to epileptic seizures. The extract of nux vomica in half grain doses three times a day, with extract of gentian, acts in a similar way; and it is worthy of remark that we often observe the sluggish state of the bowels associated with epilepsy rectified by the administration of the remedies just spoken of, in such a manner as to render the employment of direct purgatives unnecessary."

Dr. Radcliffe believes that, considering the smallness of the dose to which Dr. Marshall Hall would restrict the use of strychnia in epilepsy, the *modus operandi* of the article as shown by the researches of Dr. Harley, and the pathology of epilepsy, it is not likely that it will prove a valuable remedy in that disease.

The preparations of silver have failed, in the hands of Dr. S., to exert that influence over epilepsy which he was led to anticipate from the favourable reports of others. The verdict of Dr. R. is equally adverse to the claims that have been set up in favour of the salts of silver as remedies in epilepsy.

"It would be useless," observes Dr. S., "to attempt to lay down specific rules for the mode of administering the drugs already spoken of, since the general laws of pathology and therapeutics apply equally to the treatment of epilepsy as to any other disease; therefore, as a matter of course, the endless complications which may accompany epilepsy must be borne in mind, and the necessary remedies ordered accordingly. As long as an irritant of any kind resides in the system it would be next to useless to seek to counteract the spasmodic diathesis; the former must be first removed before we can expect successfully to combat the latter. The weak or diseased condition of any organ, though possibly not bearing any immediate relation to the paroxysmal affection, demands the physician's attention previous to, or in conjunction with, the radical treatment to be adopted. To give a detailed account of all the circumstances that might arise here, would render necessary a review of the whole domain of pathology."

The ordinary antispasmodics exert, according to Dr. Sieveking, no influence over the epileptic paroxysm. A similar experience would appear to be that of Dr. Radcliffe also.

In regard to narcotics, the first-named writer thinks we would do well to employ them more frequently than we do at the commencement of epilepsy, as we can scarcely doubt that during sleep an irregularity in the action of the nervous system supervenes, such as may be met by soothing agents. He condemns opium in these cases, preferring morphia and its salts, hyoscyamus, conium, belladonna, hydrocyanic acid, and, in some cases, perhaps chloroform.

Dr. R. has rarely found camphor, in doses of from two to six grains, either alone or in combination with either quinia or iron or both, to fail in

doing good. Chloric ether and Hoffmann's anodyne would seem to him to be also adjuvants of no small value. The first he has often given in half drachm doses, either alone or in combination with steel, quinia, or naphtha. When some temporary stimulation is called for, he has found the chloric ether, in drachm doses, with or without a little warm wine and water, a very effectual remedy. There is no better means to quiet the agitation so frequently the precursor of an attack in many of those cases which are partly epileptic and partly hysterical in their character.

The aromatic spirits of ammonia, also, Dr. R. pronounces a valuable adjuvant that may often take the place of chloric ether with advantage.

With respect to indigo, so strongly recommended by Professor Ideler, of Berlin, and Dr. Rodrigues, of France, Dr. Sieveking thinks that we are warranted in employing it when other means fail. With the effects of the article in epilepsy Dr. Radcliffe has no experience.

Dr. S. has administered the *cotyledon umbilicus*, or navelwort, in numerous cases of epilepsy; and generally speaking, the patients have appeared to be benefited by doses of from thirty grains and upwards of the extract, three times a day. He thinks the remedy worthy of some consideration. Dr. R., on the other hand, says, that there would seem to be "nothing in experience, and less in the simple itself," to warrant any hope of benefit from its use, except that which arises from the exercise of the imagination of the patient.

With regard to the value of *tracheotomy* as a remedy in epilepsy, Dr. Radcliffe believes that it is impossible to arrive at a sound conclusion until there is a greater amount of evidence furnished us.

"Still," he remarks, "it is evident that this measure does not realize all the original hopes of Dr. Marshall Hall. It does not prevent convulsion. It does not always, perhaps not usually, make the convulsion slighter. It does not prevent danger, for, as I have shown elsewhere (*London Lancet*, May 14th, 1853), of the few patients upon whom the operation has been performed, three have died either in the fit or in connection with the fit; and of the three, the opening in the windpipe was free from all obstruction—at least in one. Under these circumstances, therefore, it becomes a question whether the supposed benefits of the operation are sufficient to counterbalance the associated inconveniences and dangers, even where, what rarely happens, the asphyxial symptoms are in any degree dependent upon spasmodic closure of the glottis."

The remarks of Dr. Sieveking on the hygienic and moral treatment of epilepsy are peculiarly interesting. Strongly should it be urged upon the mind of the practitioner that moral and hygienic remedies are equally efficient in promoting, and moderating, and curing the disease as are the resources of the materia medica, in many cases even more so. To direct aright our remedial measures, every influence to which the patient affected with epilepsy may be exposed should be carefully investigated, and so directed, managed and controlled, if within our reach, as to promote the health and vigor of the entire organism. The air he breathes; the water he drinks; the clothes he wears; his ablutions; his daily occupations and habits; his amusements; his food and drinks; his mental and moral habitudes; the moral influences by which he is surrounded, and his pecuniary, civic and business condition and relations, all should be inquired into, and, so far as they require and admit of it, changed or modified in accordance with the precepts of a correct hygiene. Such a course is essential as well in reference to the prevention as to the cure of epilepsy.

The sketch presented by Dr. Sieveking of the moral and hygienic treat-

ment of patients predisposed to, or actually labouring under epilepsy, is a very well-defined, ample, and able one; correct in the principles upon which it is based, and sound in the remarks it contains in reference to the employment of special moral and hygienic means in the varying circumstances and aspects under which the disease presents itself.

Dr. S. sums up his exposition of the moral and hygienic management of epilepsy—a subject that, as he justly remarks, demands on the part of the physician an intimate appreciation of character and of the relative influences of psychical and physiological functions—with the caution to the practitioner, to examine every case on its own merits—to decide upon the treatment to be adopted according to the conclusions thus carried out, and to consider attention to nothing which may have a bearing upon the social, or moral, or physiological circumstances of the patient as beneath the dignity of science.

We commend both the works before us to the favourable notice of our readers. We take pleasure in saying that from an attentive study of them —but especially of the treatise of Dr. Sieveking—we have been much gratified and instructed. D. F. C.

ART. XIV.—*A Treatise on Gonorrhœa and Syphilis.* By SILAS DURKEE, M. D., Fellow of the Massachusetts Med. Soc., etc. etc. With eight colored plates. Boston: John P. Jewett & Co. Cleveland, Ohio: Henry P. B. Jewett, 1859. Octavo, pp. 431.

THIS volume, the author informs us in the preface, is constituted in great measure by a Boylston prize essay on "The Constitutional Treatment of Syphilis;" which essay, though modified to a degree that deprives it of its original identity, is believed to have had its intrinsic merits materially enhanced. The solicitations of others, it is declared, have prevented him from allowing the original manuscript to sleep undisturbed. We are informed, moreover, that he has devoted, in public and private practice, more than thirty years to the therapeutics of syphilis and kindred disorders.

The importance of the subjects treated upon in this work, on account not only of the character of venereal diseases, but also of their extreme frequency, together with the very unsettled state of medical science in regard to them, makes us turn eagerly towards any additional information promised respecting them. A calculation made by a distinguished English writer, from estimates he pronounces to be *ridiculously low*, shows that more than a million and a half of cases of syphilis occur every year in England, Wales, and Scotland. Of the out-door patients of the London hospitals, nearly one-half seek relief there for venereal diseases; of this number nearly one-half are women and children. In this country we have no means of forming any direct estimates; but we may infer, as passions are as strong here as elsewhere, and under no firmer control, that these affections are here equally common.

What positive knowledge do we possess in regard to these diseases not only frightful in themselves but frightfully common? There is very little,

indeed, that can be considered as indisputably determined, in regard either to gonorrhœa or to syphilis; and this is true of their origin, their cause, their pathology, and their therapeutics; in fact of everything connected with them. However well assured any one may suppose himself to be of the correctness of his own opinions on these subjects, no matter what these may chance to be, yet he cannot but be conscious that many imposing authorities may be cited against him. Is gonorrhœa a specific affection—is it succeeded at times by constitutional affections—is syphilis communicable by hereditary transmission—are secondary symptoms contagious—is there but one syphilitic virus—is syphilis conveyed by vaccination—whence does it come—does it ever originate now—does it remain forever in the system—how must it be treated—is mercury a specific—what is true of syphilization? These are a very few of the questions which we must all be desirous of seeing definitely settled. If any one thinks himself competent to do this, let him but read the recent debates in the French Academy, and see how widely different, how totally irreconcilable, are the opinions of men old in experience and wisdom. For twenty-five years Ricord held the same opinions, verifying them, as he believed, every day, and now he finds, most unwillingly though it be, that he must abandon them. We therefore welcomed a work from one who enjoys so high a reputation, as does the author of the present, and who for thirty years has been investigating these disputed subjects. He tells us, moreover, expressly, in the preface, that in some of the unsettled and disputed points "he has ventured to offer a helping hand, and to interpose a word of reconciliation, especially in the field of therapeutics"—the chapter devoted to the consideration of secondary syphilis, where no primary accident has preceded, is believed "to leave no ground at all for controversy or doubt"—he hopes that the diagnosis of the various specific affections has been so dwelt upon that the physician will be aided in investigating obscure and perplexing cases; he is evidently highly gratified by his delineations of "the characteristic features assumed by the various cutaneous affections resulting from the venereal poison," and he is of opinion that the occurrence of blennorrhagia in the male, as resulting from leucorrhœa or from the menstrual fluid, a long-standing theme of controversy, "has been disposed of in a manner that will receive the approbation of his readers generally."

The first chapter of Dr. Durkee's work treats of blennorrhagia, at least of blennorrhagia in the male subject; a separate chapter, the sixteenth, being devoted to blennorrhagia in the female. The word blennorrhagia, it must be said, in order that there may be no misunderstanding in the matter, is used by Dr. Durkee as synonymous with gonorrhœa, clap, and urethritis. The statements in the preface lead us to form considerable expectations in regard to this chapter, or that portion of it a least which treats of the causes of gonorrhœa. Dr. Durkee believes there is an affection—blennorrhagia *simplex*—which is produced by a variety of causes, such as the menstrual flux, leucorrhœa, certain articles of food, as asparagus, pepper, salted meats, spirituous liquors, beer, and coffee; masturbation, rheumatism, and gout, it is said, "will likewise occasion gonorrhœa." It must be remarked here that by using the word gonorrhœa to represent both blennorrhagia *simplex*, and also another affection which he styles *malignant gonorrhœa impura*, Dr. Durkee has rendered it very difficult to decide what are his opinions. The affection he styles malignant gonorrhœa impura he tells us can alone be propagated, and is distinguished from the other by greater severity of symptoms.

At page 6 we read as follows:—

"During a practice of now thirty years, I have had scores of patients who have pretended that their urethritis might have been derived, or probably was derived, from the vaginal or uterine secretion now alluded to [leucorrhœa]; but I have never seen any evidence that convinced me of the fact. My faith in the power of leucorrhœal secretion as a source of blennorrhagia in the male, is scarcely equal to a grain of mustard seed; and I usually turn a deaf ear to all such *specious* explanations. I am unable to recognize this antecedent as the procuring cause of such an event. The subject, however, is one of which no man has the key of absolute knowledge. It must, from the very nature of things, always remain a matter of opinion. My own coincides with that of Sigmund—*that gonorrhœa alone produces gonorrhœa.*"

We have formed a different opinion from this, and we do not find sufficient reasons to change it in what Dr. Durkee has written on the subject. We were about to declare that he had not disposed of the subject in a manner to meet the approbation of his readers generally, when we found further on an opinion which coincides exactly with our own; and, if we be not mistaken, with that of the majority of the profession. We read (page 157):—

"For it must be admitted that the vaginal secretions of some females, who are perfectly chaste and entirely free from all gonorrhœal taint, *may* give rise to urethral inflammation and blennorrhagia in *some* men. Leucorrhœa has the credit of doing this. The same power is claimed in behalf of the normal menstrual fluid. There are not a few able writers who have implicit faith in the ability of both these secretions to provoke a blennorrhagic urethral discharge. Candor, indeed, compels me to go further, and to admit that an acrid condition of the ordinary mucous moisture—the epithelial exudation from the uterus or the vagina—may generate a gonorrhœa in the male."

If the expression of opposite sentiments in different portions of the work be a satisfactory disposition of the subject, we must admit that the author has accomplished his object as given in his preface.

Following this first chapter come fifteen others, treating respectively of the treatment of blennorrhagia in the male, gleet, balanitis, orchitis, herpes præputialis, eczema præputialis, irritability of the bladder, excoriations, urethral pains, spermatorrhœa, gonorrhœal ophthalmia, ophthalmia neonatorum, gonorrhœal rheumatism, vegetations, and blennorrhagia in the female.

As will be perceived, the book contains more than was promised by the title—"gonorrhœa and syphilis." On the other hand, we look in vain for an account of inflammation of the prostate, for a description of cystitis, in fact, for any mention of an extension of the inflammation farther than the urethra; and among the consequences of gonorrhœa we do not even find stricture of that canal.

We regret to have to say that we have found little calling for particular commendation in any of these chapters, while we discover in them not a few deficiencies and inaccuracies. In the one upon balanitis, there is a plan of operating for circumcision described as being as good and simple as any, which, at least so far as we comprehend the description, seems to have slender claims to favour. The procedure is:—

"To slit up the skin and mucous membrane as far as the reflection of the latter, and then cut away the frænum as far as practicable. The constricted part, which is near the edge, is removed in a circle, and the bleeding being stopped, the skin and the mucous membrane are brought together by stitches, and covered with collodion."

The remainder of this volume, containing about 260 pages, is devoted to syphilis. Here, as in the previous portion, there is a want of arrangement of subjects which renders the reviewer's task neither agreeable nor easy.

The length of time that may intervene between the application of chancrous virus and the formation of the chancre, is said by Dr. Durkee to vary from twenty-four hours to ninety days. This difference he attributes to the condition and anatomical structure of the part on which the virus is deposited :—

"If this spot happen to be denuded of its cuticular or epithelial covering, inoculation will show itself, without doubt, at an earlier moment than it would if there were no such abrasion" (p. 181).

We are quite confident that the cuticular covering, or the healthy skin as we should call it, would altogether prevent any action of the pus of a chancre, and we are nearly equally confident in the efficiency of the healthy mucous membranes. In regard to them, it may be, as is maintained by some surgeons, that the pus is so virulent that it will cause erythema and then superficial ulceration, and thus inoculation of the pus; but this is by no means certain. In fact, in the chapter entitled "Secondary Symptoms without Primary," one to which in the preface particular attention is directed, Dr. Durkee is disposed to maintain "that the primary syphilitic poison is insoluble, and that it will not act through a continuous membrane; and that the poison of secondary syphilis, on the contrary, is soluble and acts—" (p. 290). At all events, as respects the time required by the pus to manifest its poisonous action upon the tissues, we should be glad to have been informed when and under what circumstances it required ninety days. The opinion is given, distinctly and simply, without any authority therefor.

It is stated, moreover, that "we have abundant proof, both from natural and artificial inoculation, of the contagiousness of the chancrous substance, and also, as I believe, in some instances of secondary venereal matter." We cannot adopt this opinion of Dr. Durkee, but must believe in the communication of secondary syphilis under certain circumstances, as from parent to offspring, from nurse to child, from child to nurse, from man to woman through the medium of the fœtus, though we know of no abundant proof, "from natural and artificial inoculation," of the contagiousness of secondary venereal matter. On the contrary, it has been abundantly proved by M. Ricord that by *inoculation*, either natural or artificial, secondary syphilis is never communicated. Unfortunately for M. Ricord, he supposed that because secondary syphilis was not communicated, as primary syphilis is, by inoculation, that it was not communicated under any circumstances—that it was never contagious. The views of M. Ricord might be unhesitatingly accepted if all the phenomena of syphilis were capable of being fully tested by the way of inoculation; unfortunately they are not, and it was by assuming that they are that he deduced conclusions, which must now be held to be erroneous. We know of no instance where secondary syphilis is inoculated, unless it be in vaccination, and here the valuable researches of Mr. Whitehead (*On the Transmission from Parent to Offspring of some Forms of Disease, and of Morbid Taints and Tendencies:* London, 1851) rather incline us to believe it very probable that it is sometimes communicated in this operation. This very interesting and most important subject is not mentioned by Dr. Durkee.

A very important question in the treatment of syphilis is the length of time that may intervene between the period of exposure and the infection of

the system. Hunter thought that to excise or cauterize a chancre a month after its first formation was sufficient to prevent secondary symptoms. Ricord teaches that the patient escapes if the chancre be destroyed before the fifth day, counting from the moment of exposure to contagion. Acton limits the time to three days. Dr. Durkee very truly gives it as his opinion that "it seems rational to suppose that the chances of constitutional infection are, *cæteris paribus*, in proportion to the duration of the local disease, and, therefore, the earlier we destroy any erosion or pimple induced by exposure, the more successful will the effort prove, and the less occasion will there be for any special constitutional treatment." It would, however, have been more satisfactory if the author had stated the shortest length of time at which the destruction of the sore by caustics had proved inefficient.

When the lesion consists in an abrasion, nitric acid is the caustic generally applied by Dr. Durkee. If a solitary vesicle, pimple, or pustule is to be destroyed, he sometimes selects the potassa fusa. Ricord, he says, formerly employed nitrate of silver, but now recommends the Vienna paste and the monohydrated nitric acid. What Ricord has been using of recent years is a soft paste composed of sulphuric acid and charcoal, which in many respects is preferable to any other application. Before resorting to this, Ricord used to employ the acid nitrate of mercury, or the actual cautery.

After the destruction, or the *demolishing*, as Dr. Durkee styles it, of the chancrous sore, what course of treatment should be adopted? In case the sore had become indurated, with an accompanying cluster of hardened glands in the groin, there can be no hesitation as to treating the patient constitutionally; but when a doubt may exist as to the infection of the system, what should be done? It will scarcely be possible, from anything that Dr. Durkee states in this work, whether as to the time of incubation, or as to the symptoms, to decide positively, or with an approach to reasonable certainty, as to whether a patient has a sore that has already infected the system or not. According to Dr. Durkee:—

"If the abortive plan of treatment has been seasonably executed, to the extent of completely demolishing a chancrous sore, we are warranted, generally speaking, in the conclusion that its poisonous element is destroyed also; and a resort to mercurial remedies will be uncalled for" (p. 188).

This is very well, had it been stated what might be considered as reasonable, and what may be exceptions to the general rule; at one place, indeed (p. 183), we are told: "It is admitted that the destruction of chancre, at the earliest moment of its existence, does not always prevent general infection." However, the proper course to pursue in cases of doubt is a question the surgeon is often called upon to decide.

We read at page 209:—

"If a man present himself with a sore having a hard base, this sore being the result of a suspicious connection had a few days previously, the temptation to prescribe mercury at once is very strong, provided the practitioner designs to trust to this remedy at all; and yet, the advice to defer the employment of mercury is good. The induration may be like that met with in acne, and not the persistent, cartilaginous mass, which constitutes the floor of the true Hunterian chancre."

At page 196, again, after finding it stated that though sometimes mercury may be dispensed with, yet at others it is most useful, we read that for the cure of primary venereal sores:—

"It would, therefore, seem to be wiser policy to anticipate them, in the outset,

by the timely and careful use of mercury, rather than trust to a code of practice which may not in all cases secure the desired results, without an appeal to some mercurial preparation."

We ourselves would not give any antisyphilitic remedies in a case of a doubtful nature, but treat it as a simple sore; for it is of the utmost importance that the patient should know positively whether or no he is infected by the poison, and if a specific medication be administered, it cannot be determined whether the absence of secondary symptoms be owing to the temporary effect of treatment, or to the nature of the primary lesion.

In the administration of mercury, Dr. Durkee very truly teaches, that it is never requisite or desirable to salivate. He expresses himself as follows:—

"The venereal poison cannot be drawn into such an unnatural current, and through this be piloted out and disembogued from the system. The patient cannot spit out the disease. To attempt its elimination by establishing an artificial drain through the salivary apparatus, would be like beating the air with a feather with a view to expel from it the miasm of yellow fever. In both cases, the poison is endowed with a sort of ubiquity; in the one, pervading the human constitution; in the other, that of the atmosphere."

Of the preparations of mercury, Dr. Durkee appears to prefer the bichloride; we say appears, because we are unable to determine positively his opinion. He states, at all events, that for more than three-quarters of a century it enjoyed the confidence of the most distinguished members of the profession in this country and in Europe, and that "it is certain that all the antivenereal qualities which belong to any of the modifications of mercury, or to any of its combinations with other ingredients, exist in the greatest simplicity, uniformity, and purity, and in an eminent degree in the corrosive sublimate." In connection with this subject it is stated that what was worthy of confidence once, is worthy of that distinction now; that time has not modified the nature of the venereal poison, nor has a change come over the organization of the human system. We are not called upon here to disprove or to prove that changes have taken place in the human system, but we cannot doubt that the nature of the venereal poison has been very much modified in the three centuries and more that it has existed in the world. It is, most undoubtedly, no longer so virulent a poison as it once was.

Dr. Durkee states that the protiodide of mercury, the preparation we prefer ourselves to any other, must never be administered with opium, for this narcotic counteracts its effects. He says:—

"If opium be given in combination with the protiodide, the therapeutic qualities of the latter are completely neutralized, and therefore it should be prescribed in an uncombined form. Biett made this discovery" (p. 322).

This is to us a novel statement, and one which our experience leads to believe to be entirely erroneous.

The length of time for which the mercurial preparation should be given is not stated by Dr. Durkee. He says that patients with indurated chancre, whether accompanied by bubo or not—an indurated chancre, of the kind here meant, is *always* accompanied by induration of the inguinal glands—should continue the bichloride for several weeks.

In the chapter upon the constitutional treatment of chancre are several pages devoted to the subject of syphilization. These contain a history of the experiments of Auzias-Turenne, which contains some inaccuracies. Mr. Auzias-Turenne is said by Dr. Durkee to have communicated a true chancre

to monkeys, rabbits, cats and horses. Syphilization is denounced, and the demoralizing associations and consequences connected with it are declared to be sufficient to consign it to unqualified condemnation, without entering into any discussion of the real truth or fallacy of the doctrines broached by its advocates. This virtuous indignation may be very consonant with our feelings, but it may be doubted whether our *feelings* should be allowed to decide a scientific question, and one too supported by men of such high character as are to be found advocating the doctrine of syphilization. A reviewer in our respected contemporary, the *British and Foreign Medico-Chirurgical Review* for April, 1857, p. 325, treats the subject far differently; indeed, he asserts that the advocates of syphilization have established a claim on the profession to a fair trial of their system. He states further, that—

"It is certain that remarkable results have been obtained by this mode of treatment, that cases of inveterate secondary affections have been to all appearance effectually relieved, nay, we may say, completely cured, while the number of relapses, in comparison to those known to occur after the usual mercurial course, has been extraordinarily small."

We are not citing these passages, be it well understood, for the purpose of recommending syphilization, but in order to justify, by what respectable authorities have said on the subject, our own opinion as to the mode in which Dr. Durkee has disposed of it.

The chapter devoted to phagedænic chancre is a good one. It is hardly correct however, to define this form of chancre as being "the result of acute inflammation unsuccessfully treated." It is rather the consequence of some local or general condition—local, as strangulation, œdema, or bad dressing—general, as debility, excesses, or continued mercurialitis. Those who have used the potassio-tartrate of iron in this affection, will willingly corroborate all the praises bestowed upon it by Dr. Durkee. He is, we think, mistaken as to its having been first employed by Ricord; it had been previously used, but he first gave it in very large doses, frequently prescribing six drachms in the course of the day. In advising its local application to the sore, it would have been well to notice also, that it gives to it a very dirty and discouraging appearance.

At the beginning of the chapter upon bubo, we are told that a few well authenticated cases of *bubon d'emblée*, or primitive bubo, have been met with. "Ricord mentions eight; Mr. Erichsen has seen one; Mr. Lane a few, and so on." In a note it is added, that "M. Ricord, it is said, now denies the existence of the primitive virulent bubo." It is strange to see this well-known opinion of Ricord cited in this manner, and as hearsay evidence. The non-occurrence of primitive bubo is a fundamental point in all the teachings of this great syphilographer. The various modes in which the lymphatic glands in the groin are affected by syphilitic sores, and the important indications to be deduced therefrom, are not so fully described in this chapter as they should be. For the purpose of endeavouring "to annihilate a bubo," as it is termed by Dr. Durkee, he prefers to remove the cuticle over the swelling by means of a blister about two inches square and then to dress the denuded surface with mercurial ointment, to which one-sixteenth of the quantity of powdered muriate of ammonia has been added. When pus has formed we are told that the lancet affords the best method of giving free exit to it; but the mode in which the incision or incisions should be made, a matter of great importance, is not described.

In the chapter entitled "secondary syphilis," the time during which the

poison introduced into the system may rest dormant, or not manifest its presence by any observable symptoms, comes up for consideration. It is well known that Ricord teaches that, in cases where no mercury has been given, if secondaries do not make their appearance before six months, they never will. Sigmund, an excellent authority, is still more consoling, for he declares that if a patient does not exhibit any induration at the seat of chancre, any enlargement of the glands, or affection of the skin, or mucous membranes, for three months, he may be pronounced as permanently cured. The period of the latency of the poison, however, according to Dr. Durkee, is wholly uncertain and indefinite. It has been known, he says, to appear in a few weeks, and he gives a case that occurred in his own practice, where the interval of time between the primary disease and the secondary cutaneous affection was twenty years! No mercury had been given in this case, by which those who so wish might account for the delay. Another case is appended to this, "as not without instruction, although the time between the primary chancre and the consecutive lesions on the skin was *only* eleven years." We can scarcely believe that in the course of eleven and of twenty years these two men had never been exposed to contagion again, and we must say we are not credulous enough to allow any weight to these cases. One of the men is described as thirty-six years of age, remarkably stout, florid complexion, full face, and as leading an active life as an engineer on the western waters.

As has been mentioned before, the chapter devoted to the occurrence of secondary symptoms without primary, is one to which Dr. Durkee, in his preface, invites particular attention. In a characteristic sentence, he says:—

"If the reader finds himself still roaming in the barren realms of scepticism, let him pause at least, and in an unbiassed and philosophical spirit, listen to these facts—those contained in this chapter—as admonitory voices to his incredulity, and let him glean therefrom a lesson of wisdom and prudence."

Among these facts from which we are urged to glean, are five cases that occurred in Dr. Durkee's own practice. We will admit that in all these cases the affection was truly syphilitic, and merely give the evidence brought forward by Dr. Durkee, to show the non-existence of any primary symptom. The first case is a woman [illegible] four years of age, who had been married eight months; her husband had the venereal complaint about the time of his marriage; secondary syphilis showed itself on her three months after the marriage; "that this woman ever had primary symptoms in the organs of generation, there was [illegible] particle of evidence." We are not told whether pregnancy had occurred; if it had, there could be no difficulty in accounting for the transmission of secondaries from the husband, for all are forced now to admit that this does take place through the fœtus. Neither are we told what venereal affection the husband had—it may have been primary, for all we can learn from what is said about it—nor are we told what was the evidence of the woman's never having had any primary symptom in the organs of generation; were primary symptoms looked for there, and when? after the lapse of five months it would be difficult to find them in the vagina. The second case is that of a young, unmarried man, whose secondaries—eruptions on the skin—had existed for twelve months; "he frankly admitted that he had been on intimate terms with sundry girls of the town, but had never, to his knowledge, had chancre or any other trouble on the penis or in the groin, nor had he ever had any suspicious urethral discharge or soreness." The man could readily have had an indurated chancre on his penis without ever being aware of it—and

granting that none had ever formed there, what proof have we that all the rest of the body had remained equally free? We are, at the present time, treating a young man with undoubted secondary syphilis, who never had "any chancre or any other trouble on the penis or in the groin;" these parts were carefully examined, moreover, long before the secondaries had lasted twelve months, so that all traces of indurated chancre could not have disappeared, as in Dr. Durkee's case; there is no doubt in the case we relate, that no chancre had ever existed about the privates. In the latter, however, there had existed a chancre—indurated, of course, as they always are in that position—situated on the forehead, about the inner part of the left eyebrow. This person recollects that while in some one of the Italian cities, we think it was Naples, he passed the night with a prostitute, but took every precaution, so far as washing the penis is concerned, to avoid infection; unfortunately, however, he had on his forehead, a boil that had commenced in Egypt, and was not quite healed; and he recollects distinctly that during the night in question, the small plaster covering this sore fell off many times, and required to be replaced.

The third case is that of a "frail young girl" who had been troubled for more than two years; "she stated that she never, to her knowledge, had had primary symptoms." This case needs no comment. The fourth case had already been suffering for six years when Dr. Durkee saw her. This patient was married in 1828 to a man who had had a chancre one year before; she never became pregnant; at the expiration of twenty years secondary accidents—what they were is not mentioned—displayed themselves in him for the first time, and four years afterwards, the woman found herself affected with what Dr. Durkee pronounced to be syphilitic symptoms.

"The patient was an excellent and highly intelligent lady, and her statements were entirely reliable. She said that she was not conscious of having had any complaint in any portion of the genital system during her whole life."

This case, like the preceding one, is manifestly wholly inconclusive.

The fifth case is that of a married woman, thirty-four years of age, the mother of two healthy children. She had been laboring under a tubercular eruption for eighteen months. "She reported that she has never experienced any morbid symptoms in the genito-urinary organs." Nothing is said about the husband in this instance—where does Dr. Durkee suppose the disease came from, or did it originate in this patient? We should like to know the ages of the two healthy children, with reference to the time at which the syphilitic eruption made its appearance; they may have been born before their mother was tainted. Besides the living children, had there been any miscarriages? These questions would have to be answered before we could go any further in such a case as this. At page 345 another case very similar to this is recorded, where Dr. Durkee wishes to believe that the woman had primary chancre, and does so, though she denied it stoutly. *Voluntas pro ratione stet.*

These five are all the cases Dr. Durkee has recorded, as having occurred to him in the course of thirty years. Far from their settling the question, or "their leaving no ground at all for controversy or doubt," we cannot admit them to possess any real value or weight whatever.

The rest of this chapter on the occurrence of secondary symptoms without primary, is occupied with a few facts and with the report of several opinions and discussions as to the transmission of the virus from nurse to

infant, and *vice versa*. That an infant may infect the nurse by inoculating the nipple, is, we think, abundantly proven. The communication of the disease from the nurse to the child during lactation, is certainly more rare.

From a report of some recent meetings of the French Academy of Medicine, it is evident that M. Ricord has changed his opinions on these points, and acknowledges that in this manner, secondary symptoms may occur without primary. A few years since he wrote as follows: "I have for many years had a number of nurses at the Hôpital de Midi, and I have often given them children to suckle, that were sent to me from the Maternité, with secondary affections. Never, so far as my observations extended, were these nurses infected." "On the other hand, nurses with secondaries, but no primaries, never affected children." It is certainly remarkable that a man of science and one who has long possessed unequalled opportunities for observation should find his opinions, the accuracy of which he had been testing, and proving for years, to be incorrect. The facts were always the same; why, for so many years, could he not interpret them as he has since done? This to us is an interesting problem in the history of syphilis—this change in the belief of M. Ricord.

A good deal of space in Dr. Durkee's work is devoted to the consideration of cutaneous syphilitic affections. Some seventy pages are thus occupied, divided into separate chapters, treating respectively of syphiloderma erythematosum, papular, squamous and tubercular eruptions, and syphilitic pustules. This is the best portion of the book. The eruptions themselves are well described, and the treatment recommended is, generally, satisfactory. We are particularly pleased to see so great stress laid upon the deficient sensibility of the skin in syphilitic eruptions. Most writers have remarked the absence of itching and burning pains in these affections, but they have not attached to it the importance it deserves in a diagnostic point of view. The prominence given to the use of baths, medicated or otherwise, in their treatment, is, we are sure, well deserved. The style, however, of this part of the book, is not less obnoxious to criticism than that of the preceding. For example, the chapter, entitled "Syphilodermata," opens with the following paragraph:—

> "The plastic hand of 'nature in disease' scarcely acknowledges any limit to the variety of forms which she is able to produce from a few pathological types. Especially is this true, when the human skin is selected as the chart, upon which her mysterious operations are delineated. I know that in the mind of the general practitioner great confusion, obscurity, and doubt sometimes overhang these morbid phenomena like a thick cloud. I know also, to some extent, that, by patient study and critical observation, the clouds can be removed, and the darkness give place to light."

For the purpose of illustrating the text, eight coloured plates have been furnished; one of them, representing an exceedingly well-marked case of "rupia prominens syphilitica," answers as frontispiece to the volume. The advice of "the ancient surgical celebrity," quoted by Ricord, in the preface to his *Clinique Iconographique*, we will quote again for the benefit of all who may come after Dr. Durkee: "*Gardez-vous d'ajouter de nouvelles images à celles qui encombrent déjà la science, et qui ne font le plus souvent que la défigurer.*"

Our author devotes separate chapters to alopecia, ulcers of the tongue, syphilitic diseases of the nostrils and nasal fossæ, and syphilitic iritis. Following them, comes a chapter, entitled "Tertiary Syphilis," under which form are placed gummy tubercles, syphilitic sarcocele, and diseases of the

periosteum and bones; treated of in separate chapters. The propriety of placing syphilitic sarcocele here, is not manifest from what Dr. Durkee says about it. He tells us that "the disease has been known to appear at the same time with primary chancre, and in connection with the profound abnormal phenomena that attack the periosteum and bones." Of course, it may appear at the same time with primary chancre; and so also may the profoundest of the abnormal phenomena attacking the bones, but neither of them are ever caused by the coexisting primary chancre. The position of syphilitic testicle in the series of affections caused by the venereal poison is as well determined as that of any other. It has never been seen before the fifth month following the primary chancre upon which it depends. This position of syphilitic testicle, as intermediary between secondary and tertiary accidents, is important, in a therapeutic point of view, because a combination of the remedies, most useful in both stages, is oftentimes required before the treatment proves successful. The description given of the changes that take place in the testicle, as revealed to the sense of touch, would not enable any one to recognize the disease. Following Sir Astley Cooper, he tells us that, "now and then, a slow process of foul, unhealthy suppuration is set up." At the present day no one sees suppuration in a syphilitic testicle. It is strange, too, to meet with a description of syphilitic sarcocele, in which no mention is made of the general presence of water in the tunica vaginalis.

The last chapter in this work is entitled "Infantile Syphilis." In it Dr. Durkee treats both of congenital syphilis or syphilis transmitted by inheritance, and of syphilis acquired after birth, during infancy; two subjects to which, of late years, great attention has been paid by medical men. In regard to the latter subject, all that is said, is, that infection may, though this is probably very unfrequent, be communicated during parturition by the infant passing through the vagina covered with primary venereal ulcers; and that there is also reason to believe, that the milk of a syphilitic nurse is sometimes the medium of infecting the nursling, whether the breast be the seat of any local disease or not.

It is only in some rare instances, Dr. Durkee tells us at the beginning of the chapter, that the syphilitic taint never shows itself in the offspring of venereal parents. On the next page, he says that it is extremely rare for the child to be tainted with constitutional syphilis, when the father is free from constitutional symptoms at the time of the impregnation of the ovum. Further on we read, that the blight of the ovum and abortion are often produced by the presence of the syphilitic virus derived from the vitiated spermatozoa of the father, who, as well as the mother, may be in good health at the time of conception. It is not very clear what Dr. Durkee's opinion is as to the frequency with which syphilitic affections are transmitted to the offspring; one thing, however, we may be positive about, which is, that, with the great majority of modern surgeons, he believes that hereditary transmission does occur. This has been, indeed, the general belief at all times; for, until the time of Hunter, who taught that as a secondary or constitutional affection, syphilis could not be transmitted to the fœtus in utero, we do not know that such transmission was seriously questioned.

Little is to be gleaned in regard to this important subject—about which so much has been written of late years—from Dr. Durkee's statements in this chapter. We are told therein that sooner or later after birth, generally before the second month, certain diseases of the skin—among which pem-

phigus, by far the most common of all, is not mentioned—and certain affections of the mucous membranes of the nose and mouth manifest themselves. Not a word is said of the well-known changes in the liver, of the peculiar abscesses of the thymus gland, or of the abscesses found in the lungs of children who are dead-born, or die soon after birth from, we will not say infantile syphilis as Dr. Durkee does, but from congenital syphilis, from syphilis contracted during intra-uterine existence from the formative or nutritive elements received from the parents; nor are the morbid changes, undergone by the maternal placenta in cases of this kind, described, indeed they are not even alluded to.

It has been our aim, in what we have written, to present a fair and unbiassed view of the contents of the volume before us. In doing so, we have freely criticized the author's views where we conceive them to be erroneous, and have candidly commended such parts of the work as seemed to us to be worthy of praise.

It only remains for us to notice the style in which the work is written, and which appears to us to be too ambitious, and unsuited to a scientific work. Thus he says the patient with chronic epididymitis "is unfit for much physical activity by day, and the sleep of the labouring man is not his." To the same individual, "free libations of sarsaparilla-decoction" are advised as useful. A married man, Dr. Durkee knew, "had a tall, slender, gaunt frame, was well fenced in with bones, but was far from being robust." In listening to the tales of patients, with spermatorrhœa, "it often requires the ingenuity of the most expert tactician, to winnow the truth from error." Blood is often called rich, but it is unusual to hear it spoken of as "opulent." As an instance of the peculiar orthography adopted by the author, we will quote the following: "By demolishing a chancre at an early period, you lay the *ax* to the foot of the tree." W. F. A.

BIBLIOGRAPHICAL NOTICES.

ART. XV.—*Transactions of State Medical Societies.*

1. *Transactions of the Medical Society of the State of Pennsylvania, at its Annual Session held in Lancaster, May*, 1858. 8vo. pp. 127.
2. *Transactions of the Third Session of the Medical Society of the State of California, convened at San Francisco, February*, 1858. 8vo. pp. 168.
3. *Transactions of the Medical Society of the State of New York for the year* 1859. 8vo. pp. 454.

1. THE Transactions of the State Medical Society of Pennsylvania at its annual session of 1858, comprise, independently of the address of the President, only nine reports from county societies. Even these few reports are in the main meagre and unsatisfactory. There must certainly exist a culpable degree of apathy on the part of the great body of the profession throughout the State in respect to the medical organizations which exist in their midst, or an entire ignorance and disregard of the important advantages which these organizations are adapted to confer upon all those who heartily enter into and co-operate with them.

The address delivered at the opening of the session by the President of the Society, Dr. John L. Atlee, of Lancaster, was able and judicious. Somewhat desultory, perhaps, but, nevertheless, replete with important remarks in reference to subjects which imperatively claim the serious attention of the profession in this as in every other State. Dr. Atlee endeavours to enforce upon the notice of our physicians the fact that complete and thorough organization upon a liberal and practicable basis, and a strict conformity to the code of ethics in all its requirements, are two of the things which are essential to elevate the medical profession to its true position, and to secure to each of its members the free enjoyment of his rights—enabling the profession the more effectually to accomplish its beneficent mission in the prevention as well as in the cure of disease—in the protection of the community from all injurious agencies, and in the prolongation of the health and vigour—the usefulness and enjoyment of the human organism to the latest possible period.

The first of the professional reports in the present volume of *Transactions* is from the Beaver County Medical Society. It commences with a neat and very concise sketch of the topography of the county, and of the principal endemic and epidemic diseases which prevailed within its limits during the year 1857. The leading fault of this report is want of fulness and sufficient elaboration. Some of the cases of disease embraced in it are, however, sufficiently interesting.

In the early part of the spring of 1857, an epidemic of scarlet fever commenced in the town of Rochester, at the mouth of the Beaver River. It gradually extended up and down the Ohio, over an area of country about three miles long by half a mile broad. Within these limits it prevailed to a greater or less extent all the spring and summer; lingering on until the first of September, when it slowly ceased. Sporadic cases, however, were met with until the middle of October.

"The epidemic," it is stated, "was only remarkable for its mildness, the great majority of cases requiring little or no medical interference. Where proper care was exercised, but few deaths occurred, and many cases passed through the disease and made good recoveries without our services being required. The extreme mildness of the disease in many cases, and the speedy recovery of health, lulled parents into security, and thus gave origin to an unusual number of cases of nephritic disorder, which we sometimes found difficult to manage, and in a few

instances, a fatal termination ensued. So frequent and troublesome was this sequela that some of our physicians adopted the course of keeping up a mild purgative and diuretic action for a week or two after the apparent restoration to health. In the treatment of the febrile symptoms the salts of potassa were almost universally employed, and always, seemingly, with good effect. Some employed the acetate, some the hydriodate, but the general favourite was the chlorate. Due attention was of course given to the throat, nostrils, and bowels, but the basis of treatment, in all the cases reported to the society, was potassa in some of its combinations. Where the strength would permit its use, digitalis appeared to possess almost specific power over the dropsical effusion supervening on the disorder of the kidneys; the stupor and swelling disappearing rapidly and permanently under its magical influence."

"The following extraordinary case is extracted from a report of Dr. Oliver Cunningham: "I was called to visit a man about fifty years of age, affected with strangulated hernia. The treatment was such as is usual in such cases: the taxis, bleeding, opium, warm baths, cold applications, injections, &c. The patient was an ill-natured, irritable man, and very difficult to manage. I insisted upon operating, but he positively refused to submit. But in about a week he became anxious to have an operation performed, but I then declined, believing it to be too late. Stercoraceous vomiting had set in on the second day, and still continued. At the end of ten days, I succeeded in reducing the hernia, when a quantity of pus and blood was discharged. The bowels above the stricture still not acting, I pushed calomel and opium to moderate ptyalism, employing at the same time, injections, fomentations, and cathartics. Finally, on the *twenty-sixth* day, after I had first seen the patient, I administered a large dose of croton oil, and in a short time afterwards, the stercoraceous vomiting which had continued up to this time, and refused to be allayed, ceased, and in about four hours, the bowels acted, with a discharge in quantity beyond belief. At least two gallons of fecal matter passed at the first two motions."

In the report from the Berks County Medical Society we are told that, during the spring of 1858, scarlatina and measles appeared apparently in very close alliance. Frequent cases occurred when, evidently, the rubeola commenced with its usual symptoms, and in the course of forty-eight hours the eruption changed or merged into the scarlet rash, with anginose symptoms, high fever, swelling of the parotid and submaxillary glands, irritable stomach and bowels, and generally otitis; so that instead of having simply a case of measles to treat, the physician found his patient labouring under a severe attack of scarlatina anginosa, much to his chagrin and annoyance, as well in consequence of the supposed inaccuracy of his diagnosis, as of the perplexing inquiries of anxious parents.

The chief part of this report is devoted to a biographical notice of Dr. William Gries, a distinguished physician of Berks County, and one of the most efficient and active members of its medical Society. He died at Reading, on the 12th of April, 1857, in the 61st year of his age.

In the very short and unsatisfactory report from Blair County, the fact of the joint prevalence of scarlatina and measles is noticed, as well as the repeated blending together of the two diseases. "In May," it is stated, "whilst scarlatina was disappearing, rubeola was correspondingly increasing in frequency, and also becoming less complicated with the declining disease. During June, this disease prevailed very generally, and that, too, without respect to age. It was well developed in a number of adults who said they had had it in early childhood. The epidemic had nearly disappeard by the first of July."

The report from the Carbon County Medical Society presents a mere outline sketch of the physical characteristics, and of the sanitary condition of the county during the year 1857.

In the report from the Chester County Society, it is stated that scarlatina and measles prevailed extensively during the spring of 1857, throughout the county. In a few localities the former disease was exceedingly fatal. In some cases, scarlatina preceded the appearance of measles, the epidemic appearing in the fall months of 1856, and during the spring months of 1857, being replaced by the latter disease. This order was reversed in several instances.

To this report are appended biographical notices of three of the deceased

physicians of Chester County. Dr. S. A. Ogier, a native of Charleston, S. C., who was killed by a locomotive on the Pennsylvania Railroad, November 26th, 1857, in the 36th year of his age. Dr. Richard B. Dilworth, a native of Philadelphia, who died at Wilmington, Del., November, 1851, in the 41st year of his age; and Dr. Elisha Gatchell, who was born in Chester County, and died in Philadelphia, October 5th, 1857, in the 29th year of his age.

We extract the following from the report of the Lebanon County Medical Society:—

"The most obstinate, as regards duration, and the most fatal epidemic (during 1857) was scarlatina. It has prevailed for the last two years, abating for a season, and then making its appearance with increased severity. The last case reported occurred in the month of April last (1858). The ratio of mortality, although less prevalent during the past than the previous year, was one in six and a half or seven, instead of one in eight and a half to nine. This increased mortality is attributable to the fact that the type of the disease assumed generally a more congestive form than was previously observed. The severity of the disease was such that, in many instances, death occurred in a few hours after the attack."

"In comparing the different reports in reference to the treatment of scarlatina pursued by the physicians of the districts in which it prevailed, we find a great diversity of practice. The truth is that there is no treatment which has come under our observation, which may be considered as emphatically *the* treatment. Mild cases recover with little or no medication, while in more severe or malignant forms, the best directed efforts will prove abortive.

"Measles made its appearance in the vicinity of Lebanon, in the month of January, 1857, and in the month of April it became the prevailing disease, having superseded scarlatina. In numerous instances a blending of the two maladies occurred, the two characteristic eruptions in different parts of the body being well marked, and the catarrrhal and anginose symptoms very decided. The disease subsided during the summer, but reappeared in the month of September. The reports of the physicians of Lebanon and vicinity confirm the fact, that as scarlatina began to abate measles took its place."

We find nothing of especial interest to note in the report from the Perry County Medical Society. Appended to it is a biographical notice of Dr. Benjamin F. Grosh, a native of Marietta, Pa., who died at Andersonburg, Perry County, November 9th, 1857, in the 40th year of his age.

We extract the following notice of a curious case of spasmodic closure of the œsophagus, attended with general nervous depression, and terminating fatally, from the report of the Schuylkill County Medical Society. The case is reported by Dr. McKibbin, of Ashland.

"The patient was a delicately-built man, aged 24 years; previously in excellent health. On the evening of October 23d, after partaking sparingly of supper, he found himself unable to swallow the slightest particle of any solid or liquid substance. The doctor was called in on the 27th. Found no pain, sickness of stomach, or difficulty of breathing, but great weakness, constant slavering, intense thirst, and desire for food, with sleeplessness. Voice as in cynanche tonsillaris, of which, however, inspection showed no signs. He would seize a glass of water, make a powerful effort to swallow, retain some in his mouth, and try vainly, with all his strength, to urge into his gullet a single drop. A stomach-tube passed readily, proving no stricture to exist, and whey, beef-tea, &c., were injected with some temporary advantage. Blisters to the throat, stimulating liniments to spine, injection into the stomach of brandy, nutriment, etc., proved abortive, from an apparently total lack of nerve force, and the patient died on the 29th. A *post-mortem* examination was refused. The case seemed to exhibit some of the symptoms of hydrophobia, though nothing in its history appeared as an alleged cause."

In the report from the Susquehanna County Medical Society, Dr. L. A. Smith, of New Milford, states that "bronchocele is quite a common complaint there among the female portion of the community." The cause of it he is unable to account for, unless it be from the want of iron or lime in the water which most families use.

2. The Transactions of the Third Session of the Medical Society of the State of California (February, 1858), open with the address of the retiring President, Dr. Henry Gibbons. The main subject of the address is the character and condition of the medical profession in California. Sad and gloomy is the picture delineated by Dr. Gibbons in all its aspects. Of the ethical and educational standing of the physicians who followed in the train of emigrant adventurers that from almost "every country under the sun," have flocked to the shores of "the golden sanded rivers" of the Eldorado of the West, he gives a most unflattering exhibit.

Dr. Gibbons very correctly points to the only available and efficient means for the regeneration of the medical profession of California—the only agency by which its character, professionally and morally, can be elevated to its proper standard, and harmony caused to take the place of the existing discord in its ranks. This means—this agency, is the complete organization of all the legitimate members of the profession throughout the State, into local and county societies, under the general jurisdiction and supervision of one general head, composed of delegates from each portion of the State—bringing them thus under the immediate influence of the recognized code of professional ethics—imbuing them with its spirit and that *esprit du corps* without which it is impossible to render each the trusty guardian of the interests of the whole. By such an organization, the moral character of the medical profession of California may, doubtless, be brought up to the proper standard, and its unity of action and of purpose so secured, that the best interests of each of its members, in common with that of his colleagues, and of the community at large, may be effectually promoted.

The report on the topography, meteorology, endemics, and epidemics of California, by Dr. Thomas M. Logan, is a highly creditable production—presenting a somewhat elaborate and most interesting exposition of the several subjects embraced in its title. The general facts it presents cannot fail to prove of immediate value in the investigation of the etiology and prophylaxis of the diseases incident to the inhabitants of the Sacramento and San Joaquin valleys, and as interesting for reference hereafter, when the medical topography of the entire country shall become materially modified by draining, cultivation, and the other necessary results of increased population and of those processes by which land and water, mountain and valley, forest and prairie, are rendered subservient to the wants and interests, the comforts and luxuries, of man.

A large number of the diseases which up to this period have prevailed in California, and by which the major portion, perhaps, of the deaths that have occurred among the first immigrants and sojourners, and among the early settlers, and even among the present transition population of its principal cities, as well as its mining and agricultural districts, are attributable evidently to causes altogether extrinsic to the mere influence of climate and locality, and will be known hereafter only as a matter of history.

In preparing that portion of the report which is devoted to a consideration of the diseases of California, the writer has confined himself chiefly to a consideration of epidemic visitations.

"Most of these diseases," it is remarked, "as we have seen in their history, owe their prevalence to accidental causes, and can hardly be regarded as *endemic*. Some forms, however, as intermittent fever and diarrhœa, may be regarded as endemic, but these have been found to be so much under the influence of preventable conditions, and the control of science and civilization, that we might, perhaps, with much propriety, claim for our salubrious State an exemption from endemics—certainly from those of a malignant kind. A few sporadic cases of various recognized forms of disease occasionally occur, as the tables which accompany the report attest, but soon die out for want of proper pabulum. It will, however, be observed on reference to the table of average mortality, that the diseases we have specially dwelt upon, are all included in the class zymotic, which embraces epidemic, endemic, and contagious maladies, and of which class forty-seven per cent., or nearly one-half of the total number of deaths that occurred during eight years, are found."

"In reference to the geographical distribution of diseases, we believe," says Dr. L., "that the true philosophy of the *causa morborum*, as far as California is

concerned, will be found in the combined influence of the meteorological and physiological conditions, modified by temperament, and that the varieties of disease, as cholera, diarrhœa, typhoid fever, &c., here met with, depend greatly, if not entirely, for their manifestation, on the mode of life (hygiene) of the inhabitants. The history of the diseases we have traced reveal this—their appearance and disappearance depending on the mode of life of our inhabitants, and the increase and decrease of the comforts and ameliorations of society."

In a report on practical medicine, by Dr. I. P. Whitney, a brief notice is taken of a disease which has repeatedly prevailed during the last three years in the valley of the Bay of San Francisco. Its principal subjects were children, in whom the most serious observable lesion was of the throat.

"Indeed," Dr. W. remarks, "this anginous complication is regarded as so essential a part of the disease as to have given to the entirety of the affection the name of *the sore throat.* * * * If the disease ever originated from contagion, it must be, like typhoid fever, only so propagated under circumstances which tend to concentrate the poison in the excretions of, or the atmosphere surrounding, patients suffering under it. I have never seen a case which I was satisfied was derived from this cause. According to my observation, the closest etiological relationship of this affection is with influenza, whilst its nearest pathological neighbour is scarlatina. Like influenza, it appears to originate in some peculiar atmospheric condition; and, like scarlatina, whilst it affords evidence of the action of a blood poison, the local lesions which it exhibits are in many respects similar to those produced by the particular poison of the latter disease. In the cases of the disease which have fallen under my observation, I have seen every grade of throat affection, from the simplest blush of faucial redness, like that exhibited in the mildest cases of scarlatina simplex, through the tumefied fauces, with pseudo-membranous patches, stiff neck, and swollen cervical glands of scarlatina anginosa, to the deeply ulcerated fauces, with gangrenous patches, fetid breath, sorded teeth, and profound vital prostration characteristic of scarlatina maligna—the cynanche maligna of Cullen. And further; in two cases that I have treated of this throat affection, about the fourteenth or fifteenth day from the accession of the complaint, there occurred chills, followed by fever, headache, restlessness, pain and tenderness of the loins, and vomiting, with a puffy swelling of the face, accompanied by frequent micturition, the urine being scanty, and of a dark, smoky colour. Suspecting from the above train of symptoms the existence of a renal affection, the same as not unfrequently succeeds to scarlatina, I examined the urine by heat, nitric acid, and the microscope, and found it highly albuminous, and containing blood corpuscles, fibrinous and epithelial casts and cells, and some crystals of lithic acid."

In respect to treatment, Dr. W. merely states that he employed as his chief remedy the mineral acids. In several cases of great severity, the only medicines, general or local, employed by him, were the following: ℞.—Acid. sulphurici aromat. ℥ss; syrup. rosar. ℥iiiss. A teaspoonful of which, in a tablespoonful of water, was given every two hours; and acid. hydrochlor. ℥ss; combined with mellis rosæ ℥iss; was applied to the fauces with a mop of linen rag, three or four times a day, where the ulceration had a sloughy appearance.

Dr. J. E. Oatman contributes a paper on the malarious influence and its treatment; that is on the morbific influence exerted upon the human organism by exposure to malaria, and the proper management of the abnormal conditions thus induced. The observations of Dr. Oatman, though interesting, possess but little originality, while they want that precision and elaboration essential to adapt them to any practical purpose.

From a paper on tracheotomy, by Dr. Arthur B. Stout, we learn that the various throat diseases are particularly prevalent throughout California, especially during infancy and childhood. The writer refers all of these diseases to the remote effects of the malarious poison which in the mild climate of California is generated to a moderate extent during all seasons of the year.

The leading object of Dr. Stout in the paper referred to, is to enforce upon practitioners the importance of tracheotomy in the treatment of all the more violent forms of the anginose affections, not so much as a curative measure as a means of prolonging life, and placing the diseased parts in a condition of rest,

thus affording time for the cure of the general and local affections by which the life of the patient is menaced, and facilitating the cure of the latter by annulling the constant respiratory movements of the larynx. He would have the operation performed the moment symptoms threatening asphyxia appear, and proposes a new form of canula to overcome some of the difficulties attendant upon it. We fear, however, that the doctor places too much importance upon tracheotomy in the treatment of throat affections, and that experience will not confirm the same amount of beneficial results he anticipates from its performance.

In a short paper on diphtheritis, by Dr. J. Blake, it is stated that, contrary to the generally received opinion that the disease is peculiar to low, damp situations, the most fatal epidemic that has fallen under his observation occurred at an elevation of about 4,000 feet above the sea, though in a village situated in a hollow, being surrounded by higher hills. In another place, about 2,300 feet above the sea, a great many cases of the disease occurred; but this situation is, like the former, in a hollow surrounded by higher hills. It is chiefly, however, in the Sacramento valleys, and those of the coast range that the disease has been found most prevalent and most fatal.

At Cache Creek it was principally during the spring and summer months that the disease appeared, and according to Dr. Bynum, a physician of that locality, it became always more virulent after a north wind. This, Dr. B. remarks, would show, contrary to the general opinion, that a moist atmosphere is not one of the conditions favourable to the development of the disease, as during the spring and summer months the northerly winds are by far the driest that blow in the valley of the Sacramento.

Dr. Blake believes, in respect to the pathology of diphtheritis, and we are convinced that in such belief he is sustained by incontestable facts, that the disease is of a genuine zymotic character, and is caused by some external morbific influence which acts upon the whole system, and that, of this, the formation of the pseudo-membranous exudation upon the fauces is but one of the most apparent manifestations. He considers the disease to be one altogether distinct in its causes, in its character, and in its treatment, from tonsillitis, croup, and scarlet fever. In this, to a certain extent, he is to be considered as correct. Diphtheritis is unquestionably identical with neither of these affections. With the ordinary form of tonsillitis it has little or no affinity, while from croup and scarlatina it is distinguishable by well-marked and unmistakable characteristics; and yet, if attention be directed simply to the diphtheritic deposit in the throat, so far as this symptom is concerned, the whole of the four diseases under consideration may, with propriety, be considered as closely related, if not identical. Between the condition of the throat in the more violent cases of diphtheritis and scarlatina, no difference whatever can be detected, and when in both diseases the membraniform exudation extends downwards deeply into the larynx, all the characteristic phenomena of croup become developed. A specific difference has been attempted to be set up between the exudation of the throat in the several diseases referred to, based upon a supposed difference in its colour and consistence in each; we can admit, however, the correctness of neither the facts nor the reasoning upon which the doctrine is based.

"As regards the treatment of the disease," says Dr. Blake, "the views that have been already expressed as to its nature, would plainly indicate a tonic, stimulant course; and this I have found most successful where I have tried it myself, and have seen it tried by others. In those cases which are ushered in by well-marked febrile symptoms, a mild aperient, revulsives to the neck, and a mixture containing spiritus mindereri and chlorate of potash, is what I would have recourse to, giving also an emetic of sulphate of zinc and ipecac, and carefully avoiding tartar emetic and every depressing medicine." When the more violent febrile symptoms have moderated, he administers chlorate of potash, in doses of from three to four grains every one or two hours, combined with tincture of bark or quinine, the patient taking, at the same time, light and nourishing diet; and in more severe cases, where the depression is great, brandy and eggs. He has also found benefit, he believes, from the use of charcoal; it was given with the view of absorbing or sweetening the fetid excretions which to some extent must find their way into the stomach from the pharynx. As re-

gards the local treatment, he believes the application of the strong muriatic acid over the whole of the diseased surface, as far as it can be reached, is the best caustic. When there is a fetid discharge from the nostrils, a weaker solution, mixed with creasote, may be injected into the nostrils.

Of the success of the above plan of treatment, Dr. B. speaks in the most positive terms.

The report on the results of surgical operations in California, drawn up by Dr. E. S. Cooper, contains, among others, the history of a case in which a severe wound was received in the abdomen, eighteen inches in length, implicating the great omentum, descending colon, small intestines, and mesentery, and dividing eight or nine branches of the superior mesenteric artery; complete recovery taking place at the end of eight weeks. The histories, also, of two cases of wounds of the neck, with division of the internal jugular vein and primitive carotid; ligation of the artery being performed in both cases. Recovery took place in both. The history, also, of a case in which was removed by operation an osteo-sarcomatous mass of diseased structure embracing the left clavicle, sternum, sterno-cleido, mastoid and scalenus anticus muscles, with adhesion to the vena innominata, first intercostal muscle, etc. The patient entirely recovered. The history, also, of a case in which a fibro-cartilaginous tumour was removed from the uterus by ligature, with a favourable result.

A report on obstetrics and diseases of women, by Dr. R. Beverly Cole, presents a most painful picture of the moral and physical condition of the female portion of the population of California. Diseases of the sexual organs of every form and grade, the result of the particular circumstances in which they are placed, but more particularly of their dissipated lives, are, we are assured, of common prevalence. We find, however, in the strictly professional portion of the report, but little that demands especial notice.

The remaining papers embraced in the volume of transactions under consideration are equally creditable to their authors with those we have thus passed in rapid review. We feel persuaded, from the general character and tone of the reports presented at the third session of the California State Society, that the profession there includes within its ranks a number of physicians endowed with talents, zeal and industry fully adequate to its speedy elevation to the highest standard, and to enlist it effectually in the successful cultivation of the wide and fresh field for medical investigation amid which it is placed, and through its labours to enlarge materially the boundaries of medicine both as a science and an art.

3. The Transactions of the New York State Medical Society at its session of 1858, embrace a series of reports and communications which are in general ably drawn up and replete with materials of the most instructive and valuable character. They are equally creditable to their authors and to the society at whose instance they were prepared and published.

The theme of the address delivered by the President, Dr. Thomas C. Brinsmade, is "medical associations." The subject is thoroughly and ably discussed in all its aspects. The importance of the systematic association of physicians cannot be too often and too earnestly pressed upon the attention of the profession—no one of its members can claim so elevated a rank as not to need under any circumstances its aid, no one can be so insignificant as not to be materially benefited by its influence. The power of such association as a means for the enlargement, improvement, and diffusion of medical knowledge, and for securing the efficient and harmonious co-operation of each of its members for the furtherance of the true interests of the profession, is very correctly depicted, and enforced by arguments that cannot fail to carry conviction to the minds of all who will carefully consider them.

The first of the strictly professional reports is one on prognosis in cases of fracture of the neck of the femur within the capsule, having especial reference to the question of ossific union, with a few remarks, in addition, on the subject of treatment, by Dr. Frank H. Hamilton, of Buffalo. After referring to the opinions advanced by the leading surgical authorities of modern times on the question of ossific union in cases of complete fracture of the neck of the femur

within the capsule, and examining, somewhat in detail, the evidence supposed to be furnished of the occurrence of such union by the specimens preserved in various pathological cabinets, Dr. H concludes—that, notwithstanding some of the cases of supposed ossific union of the thigh bone with the capsular ligament must be rejected as of doubtful character, yet sufficient evidence remains to warrant the belief that, under certain circumstances, complete consolidation may occur in this fracture. The favourable conditions referred to have relation to the age and health of the patient, the degree of separation of the fragments, the laceration of the periosteum and capsule, the treatment, etc. "Such a combination of circumstances" Dr. H. believes to be "probably exceedingly rare; and what is more unfortunate, if they exist, the fracture is not likely to be recognized, and the surgeon will fail to avail himself of those advantageous coincidences, which might, if understood and properly treated, secure a bony union."

According to Dr. H., the chief difficulties in the way of a bony union in cases of fracture within the capsule are—

"The persons to whom the accident occurs are generally advanced in life, and consequently the processes of repair are feeble and slow.

"The head of the bone receives its supply of blood chiefly through the neck and reflected capsule, and when both are severed, the small amount furnished by the round ligament is found to be insufficient.

"When the fragments are once displaced, it is difficult, as I have already explained, if not impossible, to replace them.

"The direction of the fracture is generally such that the ends of the fragments do not properly support and sustain each other when they are in opposition.

"The fracture is at a point where the most powerful muscles in the body, acting with great advantage, tend to displace the broken ends.

"Aged persons, who are chiefly the subjects of this accident, do not bear well the requisite confinement, and especially as the union requires generally a longer time than the union of any other fracture; so that a persistence in the attempt to confine the patient the requisite time often causes death.

"Whether the absence of provisional callus, as a bond of union, and the interposition of synovial fluid between the ends of the fragments, constitute additional obstacles, I am not fully prepared to say. In the opinion of many surgeons these circumstances constitute very serious, if not the chief obstacles."

In respect to treatment, when there is complete fracture within the capsule, without laceration of the reflected capsule or displacement of the fragments, and also in the case of a fracture at the same part with impaction, our efforts, according to Dr. H., should be directed to the retention of the bone in place by suitable mechanical means for a length of time sufficient to insure bony union, or for as long a time as the condition of the patient will warrant.

"The means best adapted to fulfil this important indication are, in Dr. H.'s judgment, complete rest in the horizontal posture, the limbs being secured in straight splits constructed somewhat after the principle of Gibson's improvement of Hagedorn's apparatus."

"In treating this fracture, no extension beyond that which is necessary to insure perfect quiet can be proper, inasmuch as the fragments are not overlapped, and they need only a moderate assistance to enable them to maintain their position against the action of the muscles. Moreover, if the fragments are impacted, violent distension would disengage them and render their displacement and non-union inevitable."

Dr. H. is prepared to affirm, from his own experience, that the straight position, maintained by a suitable apparatus, will be better and longer borne than the flexed position, whether the patient be laid upon his back or side; nevertheless, the confinement to which it subjects the patient can scarcely be endured for many days, and the same is true of all other modes of treating the fracture in question.

A strong reason is adduced by Dr. H. for preferring the plan of treatment described by him, and that is, that if an error in diagnosis should be made, and the case turn out to be one of fracture without the capsule, no injury would

occur to the patient, as the treatment would be equally appropriate as in a case of fracture within the capsule. Should this plan of treatment from any cause be found inconvenient or inapplicable, nothing Dr. H. has seen will prove so available and comfortable, he thinks, as the fracture bed invented by Dr. Daniels, of New York.

The next paper is on the treatment of fracture of the femur by simple extension without splints or lateral support of any kind, by Dr. John Swinburne, of Albany. The plan of Dr. S. is to place the patient in bed, apply a broad, well padded perineal belt, as in all cases in which such belt is indicated, excepting that instead of being fastened to a splint, it is to be secured to the head of the bedstead. The pelvis being thus fixed by the perineal band, extension is to be made by means of adhesive strips so secured to the leg as to form a strong loop under the sole of the foot, through which loop a stout cord is to be passed and fastened to the foot of the bedstead.

The advantages claimed for this plan of treatment are, greater freedom of motion on the part of the patient without endangering displacement, the leaving the place of fracture open for examination, and enabling the surgeon to measure the limb as often as he desires, and regulating accordingly the amount of extension required; in cases of compound fracture facilitating the dressing of the wound of the soft parts, and insuring perfect cleanliness; the non-interference with the circulation in the injured limb by bandages and lateral pressure; the diminished danger from sloughing of the heel or malleolus; the prevention of any agglutination of the muscles to the bone, or to each other, and consequently obviating any stiffening of the limb from that source; and, finally, preserving the muscles of the limb in a better condition to resume their functions so soon as the fractured extremity is strong enough to bear the weight of the patient.

The value of the plan of treatment, in cases of fracture of the femur, recommended by Dr. S., is to be tested only by the result of treatment; this, so far as it has been obtained, is, we are assured, decidedly in its favour. In ten of the cases in which it was alone trusted to for the cure of the fracture, the utmost extent of shortening in any one of them was half an inch, and even this, Dr. S. believes, might have been prevented by greater care. In eight cases occurring in private practice, treated by the plan described, in only one was there any visible shortening—in none was there any distortion of the thigh, nor eversion or inversion of the foot. The average period during which extension was kept up was five weeks. In the majority of the cases union was tolerably firm at the expiration of three or four weeks, varying with the age of the patient, and the nature of the injury.

Six cases of fracture of the neck of the femoris within the capsule, in patients mostly over 60 years of age, were also treated by simple extension after the described plan, with results, we are assured, much better than could have been expected, and which it would have been vain to expect from any of the usual modes of treatment.

An interesting article follows—communicated by Dr. Alfred Mercer—on partial dislocations—consecutive and muscular affections of the shoulder-joint.

The displacement referred to is invariably in the direction of the acromion and coracoid processes: Dr. M. believes it to be the result of a loss of the normal antagonizing power of the posterior muscles of the shoulder, by which the pectoralis major is permitted to draw the head of the humerus forwards against the outer side of the coracoid process, when ultimately the head of the bone would probably descend on the outside of that process, then glide under it, and again mount upwards on the sternal side of the same process, under the clavicle, rather than ride directly over it.

The want of balance in the action of the two sets of muscles which act upon the upper end of the humerus, by which the affection of the shoulder described by Dr. M. is produced, is the result, he believes, of disease of the nervous system, of some constitutional affection, or of some local muscular disease suspending the nutrition of the posterior set of muscles or causing a degeneration of their fibres.

Simple reduction and retention of the head of the humerus in its normal position, will in the condition of things referred to be of no service, unless, at the

same time, the abnormal condition of the affected muscles can be removed. To effect this important end Dr. M. directs such constitutional treatment as shall be adapted to give vigor to the system—frictions, shampooing, electricity, and exercise, with every other means likely to increase nutrition and give tone to the affected muscles.

A curious case is related by Dr. C. E. Isaacs, of Brooklyn, of death thirty-seven hours after the removal of a bony tumour from the upper and posterior surface of the cranium.

The tumour, which measured a little over 3½ inches in its antero-posterior and lateral directions, was 1¾ inch in its vertical diameter at its highest point.

"The substance of its base was of exceedingly great density, and so extremely hard that, apparently, it would have been quite as easy to have sawed through a mass of ivory of the same dimensions; indeed, the sawed surface of the base, which was of a grayish white colour, had all the hardness, firmness of grain, and polished appearance of that substance. The external portion of the removed tumour, when divided vertically, resembled the firmer varieties of encephaloid, and consisted entirely of nuclei of cells and granular matter."

In removing the tumour a small portion of the upper surface of the dura mater, about the size of a York shilling, was exposed by the saw.

The following is the account of the appearances detected upon a post-mortem examination twenty-four hours after death:—

"On removing the skullcap, the under surface of the bone, which was opposite to or underneath the site of the removed tumour, was somewhat roughened, and presented many small projecting spiculæ. The skull in this situation was not otherwise diseased. The dura mater at this point was very much thickened. On cutting through this membrane with the scissors, and then turning it up on each side towards the median line, a tumour was discovered underneath the dura mater, and situated in the great longitudinal fissure, between the two hemispheres of the brain. It had originated or sprung from the under surface of the dura mater, on each side of the falx cerebri, which divided it into two unequal portions.

"This tumour was of a slightly yellowish colour, and of firmer consistency than the convolutions of the brain, from which it could be easily enucleated, without tearing the substance of that organ. Under the microscope, it was composed of variously shaped nucleated cells, of nuclei, granular matter, and numerous exudation corpuscles. It was undoubtedly encephaloid. There was not the slightest connection between it and the one removed by the operation.

"The great longitudinal sinus, where it coursed along and above the upper surface of the tumour, was obliterated for three inches and a half in extent. Thus, the veins on the surface of the brain necessarily returned their blood, by anastomosing branches, either into the great lateral sinuses, or into the petrosal and other sinuses at the base of the cranium. There was no evidence of congestion or inflammation, in any part of the brain, which appeared to be perfectly healthy.

"It is truly surprising that the presence of so large a tumour, together with the great obstruction of the venous circulation of this organ, should have produced such slight disturbance of function, the only symptoms having been loss of sight in one eye, impairment of vision in the other, and chronic headaches, of gradually increasing intensity. It can only be explained by the fact that the pressure of the tumour upon the brain must have been of such slowly increasing character, that this organ became gradually accustomed to, and enabled to bear, the presence of this enormous encephaloid deposit."

In explanation of the death of the patient so soon after the operation, Dr. Isaacs concludes that no such result would have occurred in a healthy man of equally vigorous constitution, from the mere sawing off of the bony tumour. He thinks that the influence of the anæsthetic that was administered, and from which the reaction was very slow and imperfect, exerted an injurious influence upon the brain with its imperfect and impaired circulation, and the presence of an enormous encephaloid tumour. The shock, and immediate effects of the operation, must also be taken into consideration in accounting for the fatal result.

Two cases of operation for congenital fissure of the soft palate are related by Dr. Seth Shove, of Westchester County. In one of the cases the operation was completely successful, in the other only partially so.

A case of dropsical distension of the lachrymal sac is described by Dr. John Ball, of Brooklyn.

In a paper by Dr. Edward H. Parker, of Poughkeepsie, the history of four cases are presented, illustrative of the superior efficacy of a modification of Baynton's treatment for varicose ulcers, introduced by Mr. G. Critchett in his lectures on surgery, published in the London *Lancet* during the year 1848, and practised for nine years with the happiest results by Dr. Parker.

The next article is "A Prize Essay" on scarlet fever, by Dr. Henry A. Carrington, of Dutchess County.

The essay presents a very neat outline of the present state of our knowledge in reference to the disease of which it treats. It can lay not the slightest claim to originality, and is certainly less full in reference to some of the points connected with the pathology and therapeutics of scarlatina than would seem desirable considering the formidable character of many of the epidemics of the disease, the frightful mortality often attendant upon them, and the discrepancy of opinion which still exists among the most authoritative physicians in reference to the treatment best adapted to conduct the disease to a favourable termination in the more violent and malignant of the forms under which it presents itself in its different visitations, or even in the same epidemic.

Dr. Alden March, of Albany, gives a synopsis of the history of three cases found upon record, of displaced heart, of a character to enable a very full and accurate examination being made of the action of the organ during life. All three cases have a striking similarity in many important particulars. In all, the observers attribute an active dilating power to the heart, and describe the action as sudden and energetic.

Dr. March describes also a fourth case which fell under his notice. The infant, who was its subject, died within two hours after birth. The heart protruded from the cavity of the thorax through an opening situated at the junction of the ensiform cartilage with the lower end of the sternum proper, and was destitute of pericardium.

The heart stood out in nearly a horizontal position from the surface of the body, with one face looking upwards and the other downwards, one ventricle and auricle being turned to the right, and the other to the left. The heart being thus suspended, apparently, across the lower margin of the membranous opening by the bloodvessels, and counterbalanced by the lungs within the thorax.

The true skin was deficient from the lower border of the cardiac opening to near the stump of the umbilical cord.

Dr. March has been furnished with brief notes of a case nearly parallel. He believes that accurate observations made upon a few such cases would shed light upon what appears to be a mooted question, the location and structure, namely, of the parts to which the pulsations have been referred by so many different individuals in the case of M. Groux, which has attracted recently considerable attention among the leading physicians of Europe and America.

A very good, though far too concise an account is given by Dr. John D. Watkins, of Sullivan County, of bilious or typhoid pneumonia, a disease, which, in certain portions of the United States, prevails often as an extensive and even fatal epidemic. It is evidently a disease of malarious origin, or perhaps, to speak more correctly, it is a form of pneumonic congestion or inflammation, complicating, in certain cases, an attack of bilious remittent fever, and in others of typhoid fever, and essentially modified, in consequence, in many of its prominent features as well as in its course.

In the sanitary report of Brookfield, Madison County, for 1857, Dr. A. L. Saunders gives an account of an epidemic of cerebro-spinal meningitis, which occurred in his neighbourhood during that year.

The attack was preceded, for from three to ten days, by lassitude, loss of appetite, restless nights, morbid susceptibility to cold, when, after exposure, over-exertion, mental excitement, etc., the patient would be suddenly seized with severe pain of the head, neck, back, and extremities, with chills and flashes

of heat; a small, weak, and frequent pulse, slightly-furred tongue, mouth coated with tenacious mucus, dizziness, nausea, sometimes vomiting on assuming the erect position, cramps in the legs, contraction of the muscles of the back part of the neck and body, causing often complete opisthotonos, with delirium or insensibility. In some cases there was very slight febrile reaction, the patient sinking rapidly as if destroyed by the action of a virulent poison. In a few cases there was febrile reaction. Generally about the end of the first week, sometimes sooner, sometimes later, congestion of the lungs set in, and unless promptly relieved, soon terminated fatally. Convalescence was always tedious. In some cases there was an eruption as in typhus fever, which was absent in other cases of apparently equal severity.

In the cases of the disease which terminated favourably under the care of Dr. S., the treatment consisted of emetics of tartar emetic and ipecacuanha, with a little tincture of aconite, followed by calomel and rhubarb, five grains every four hours, alternated with as much of the solution of tart. emetic and ipecacuanha as the stomach would bear without nausea, with, in most instances, strong sinapisms to the entire length of the spine. In one case, cups to the spine were used at an advanced stage.

Dr. S. was unable to satisfy himself that any particular location, position in life, or condition as to filth or cleanliness, had anything to do in the production or prevention of the disease. It occurred upon the highest hills, and in the lowest valleys; among the wealthy and the poor, among the scrupulously clean and the beastly filthy. It attacked the aged, middle-aged, and young. The majority of those attended by Dr. S. were, however, adults below the middle age.

An able report on inversion of the uterus follows. It is from the pen of Dr. John V. P. Quackenbush, of Albany. The entire subject—the causes, mode, and circumstances of occurrence, etc.—is discussed by Dr. Q. The main object of the report, however, is to show that the ordinary explanation of the mode of production of the inversion is not the correct one, and that by proper manipulation the inverted uterus may be reposited in cases of long continuance.

The manner of reposition practised by Dr. Q. is as follows:—

The inverted uterus should be grasped firmly in the palm of the hand, so as to reduce its bulk by lessening the quantity of its blood. It should now be carried firmly up into the vagina, and pressed steadily. The latter will become tense, and *reinverts* the os uteri. Steady pressure should be maintained, and the uterus will continue to double upon itself; evolution takes place, the uterine tumour shortens at its *neck*, complete reinversion is effected, and no depression or dimpling of the fundus is at any time perceptible; and at no time by this method are there more than two layers of the uterus passing through the mouth. Dr. Q. states that while his own experience proves the applicability of this plan in recent cases, Tyler Smith, of London, and James P. White, of Buffalo, N. Y., have both recorded cases, one of twelve, and the other of fifteen, years' duration treated successfully by it.

Another communication on inversion of the uterus is communicated by Dr. Daniel P. Bissill, of Utica. From the facts adduced by him he draws the following general conclusions:—

"1st. Under circumstances favourable to such a result, irregular muscular contractions of the superior part of the womb may cause the fundus to fall down into the cavity of the body of the organ, and thus produce partial or complete inversion.

"2d. The sudden delivery of the body of the child by manual force, immediately after the head has passed the external parts, and before the expulsive efforts of the uterus are renewed, is unsafe, and may produce partial inversion by allowing the fundus to collapse, and follow the escape of the child from the uterus in the manner supposed in the second case reported.

"3d. Similar objections exist to the too frequent practice of hurrying the separation, &c., of the placenta before contractions are excited in the womb, by pulling at the navel string, whereby injuries to the placenta, dangerous floodings, and even inversion of the womb are sometimes produced.

"4th. In cases where the placenta is attached to the inverted uterus, the separation of it may as safely be performed before reducing the organ as it can

be afterwards, and in some cases it will be most safe and expeditious so to do, but no uniform rule of procedure will be found applicable to all cases, and each should be treated, like other diseases, on general principles."

A short note follows on the origin, history, and present condition of the Asylum for the Insane at Canandaigua, by Dr. George Cook, its superintendent.

From a paper on diphtheritis as it occurred in Albany, by Sylvester D. Willard, we learn that coextensive with its prevalence, there appeared to a very great extent among the adult population of the place, a diffusive inflammation of the throat of a mild character. There was, in the majority of cases, only a simple blush upon the fauces, while in other instances the palate, uvula, and tonsils were highly vascular. The appetite and general health were undisturbed. The only sensation experienced, was that of dryness and roughness of the affected parts. This morbid condition yielded readily to the application of the nitrate of silver or an astringent gargle, or it would in a few days disappear without any aid from remedies.

Simultaneous with the occurrence of diphtheritis there also made its appearance, principally among children and young persons, cases of acute tonsillitis, followed by suppuration. In a few cases, from the very outset, the tonsils have been of a dark mahogany colour, and the ulcers on their surface have assumed a greenish cast. In such cases mortification and death have ensued.

The cases of diphtheritis prevailed among children, mostly in those under twelve years of age. Its onset was sudden and insidious, occasionally the deposit in the throat had taken place to some extent when attention became first attracted to the case. The deposit extends rapidly over the palate, tonsils, rima glottidis, into the larynx and trachea, producing mechanical obstruction to respiration, the patient dying with all the symptoms of croup. In some cases, on first inspection, the tonsils were found swollen and covered with a pellicle of a pearly or oyster-like appearance. Such cases were almost always of rapid progress, terminating fatally in two or three days. In cases of slower progress, after several days, there would occur from the mucous membrane of the nose, fauces, and bronchi a thick, offensive, acrid secretion, as is so often met with in scarlet fever. Disease extends to the skin and cellular tissue about the throat and chest externally, the parotid glands become swollen, and before death takes place there is incipient mortification and decomposition of these parts. In some cases there is shown a strong effort for the separation and removal of the membraniform exudation from the fauces and for its discharge from the respiratory passages. Separation may often be hastened by seizing with a forceps portions of the pellicle and gradually and gently detaching it. There is always, however, a strong tendency to its reproduction, even when large patches have been separated and discharged by vomiting, expectoration, or otherwise.

In its pathology, diphtheritis, according to Dr. W., is nearly allied to scarlatina. A case of scarlatina, in all its symptoms, save the efflorescence on the skin, so closely resembles one of diphtheritis, that Dr. W. thinks it would require a very delicate diagnosis to distinguish them.

Dr. Howard Townsend, of Albany, contributes a paper on the hypophosphates—especially that of lime—as a remedy in tuberculosis, with a general conclusion adverse to its supposed efficacy.

A most interesting case of facial paralysis is related by Dr. Charles G. Bacon, of Oswego. The paralysis occurred first on the left side, and was caused probably by irritation of the facial or seventh nerve, by the eruption of the dens sapientia of the upper maxilla of the same side, and exposure to cold. The swollen gum was freely excised, mustard pediluvia were employed, active catharsis procured, and the camphorated liniment with tincture of opium applied to the mastoid region, and the angle of the jaw, and subsequently electro-magnetism to the same region was resorted to, followed by a blister to the mastoid region, the denuded surface produced by it being sprinkled twice a day for two days, with one-eighth of a grain of strychnine and then a few doses (fifteen drops) of a solution of three grains of strychnine in ℥j of alcohol were taken. At the end of some seventeen months the paralysis had entirely disappeared. For about ten months the patient enjoyed uninterrupted good health, when he was again attacked with facial palsy of the right side. The gum of this side was swollen.

A treatment somewhat similar to that pursued in the first attack was directed. At the period when the report was drawn up, about four weeks from the date of the second attack, the paralysis was lessened in extent, and the general health of the patient was good. The gum was less swollen but the tooth had not yet made its appearance.

A sensible paper follows on the influence of vegetation on animal life; it is contributed by Dr. Griffin Sweet, of Herkimer County, it contains, however, nothing of a very novel character, and no leading suggestions of a directly practical bearing.

The importance of every physician making daily a full and accurate registration of the cases of diseases treated by him, is strongly urged in a communication by Dr. William C. Rogers, of Albany County.

An interesting case of rupture of a "cul de sac" of the transverse colon, with discharge of the fecal contents of the bowel into the cavity of the abdomen, and their subsequent discharge externally, by ulceration or rupture, through the walls of the vagina, is related by Dr. Horace K. Willard, of Bern. The patient eventually recovered entirely—the opening between the cavity of the abdomen and the vagina becoming entirely closed. It would be very difficult to give to our readers a clear conception of the peculiar features and exact character of this case by an epitome of its history. To understand these fully the account as given by Dr. W. must be studied in extenso.

In the report on the diseases of Saratoga County, the author, Dr. James Lee, furnishes the description of a peculiar form of fever, of the remittent type, which prevailed in that county during the autumn of 1855, a parallel to which he has not met with in any of the recorded cases of febrile disease, or in the descriptions contained in the systematic works on the practice of medicine.

The peculiarity of this disease consisted more in the negative character of its symptoms than in the development of any new or strange phenomena. It was attended with considerable fatality. In Dr. L.'s own practice, out of thirty-five cases, he lost two, and he thinks this ratio of mortality was not less in the practice of others.

For the first few days of the attack no prominent symptoms were present. The patient complaining very little, if at all. There was generally observed great lassitude, with indisposition to physical exertion; loss of appetite; slight gastric uneasiness, with paleness and increased sensibility of surface. At first accessions of chilliness would be experienced, without being followed by any decided febrile paroxysm. Throughout the attack, there was generally entire exemption from headache or continued excitement. In the two fatal cases only was the peculiar condition referred to cerebral congestion present.

The tongue was, at first, either clean, or covered with a scanty adhesive coating, through which the enlarged papillæ appeared. For a few days, the pulse was small, compressed, and slightly accelerated.

After the expiration of five or six days, the fever would assume a more regular character—the usual periods of exacerbation occurring in the after part of the day, continuing for several hours, and then being followed by a distinct remission, amounting in some cases almost to an intermission.

The pulse gradually increases in fulness and quickness, the temperature of the surface becomes more elevated, and the skin assumes a dusky-red appearance. The tongue is now more abundantly covered with a dark-brown coating, and its edges are abnormally red. The gastric irritability is increased and attended usually with vomiting of a bright green or bluish fluid. The bowels become loose, and are with difficulty controlled. There is considerable thirst—but cold water or other cold drinks were found to act upon the bowels like an active cathartic. There was, also, an entire loss of appetite with, generally, loathing of food.

These symptoms continued for several days. Usually about the fourteenth day from the accession of fever, a tendency to crisis would occur, but seldom followed by complete solution of the fever. In some cases it would be succeeded by alarming evidences of general prostration, with profuse hemorrhage from the bowels. More generally, however, the tongue would become dry and dark coloured, the pulse frequent, soft, irregular, and often intermittent. Involuntary

evacuations from the bowels would occur, of a dark-coloured fluid, sometimes tinged with bile, but more often with the colouring matter of the blood. The heat of the surface, especially of the extremities, would become now much diminished, and the patient would lie in a listless, apathetic condition, but entirely conscious.

After a few days, by a rigid course of tonics and stimulants, combined with the most concentrated form of animal nutriment, reaction would begin to be established, and the morbid discharges from the bowels arrested. The normal secretion of the mouth would, in a measure, be restored, the pulse become more full, and the temperature of the surface augmented. As convalescence approached profuse sweating would often occur—the coating of the tongue would separate, quite suddenly, in large flakes, leaving the surface beneath, smooth, without papillæ, as though varnished. Subsequently the tongue and the entire mucous membrane of the mouth would sometimes become thickly covered with a substance resembling the curd of milk—which would become detached, and again reappear more than once. Its presence was always attended with disgust for food, and a protracted and difficult convalescence. In some cases, in the aged, the tongue was gashed or furrowed, and in others the entire mucous surface of the mouth and fauces would be studded with patches of aphthous ulceration.

Tenderness of the epigastrium was often present, but decided tympanites never. Convalescence was usually slow, and often attended with the formation of abscesses in various parts of the body, which were generally ill-conditioned, and gave discharge to large quantities of a sanguineous purulent fluid. Relapses occasionally occurred, recovery from which was very slow.

As the cold weather advanced, the disease seemed to blend itself with the ordinary affections of the season, and its influence on all the types of disease prevalent in the county still continues to be felt.

In regard to treatment, Dr. L. usually commenced with the blue pill, and continued its use, in moderate doses, until it showed its influence upon the hepatic secretion. When it affected the bowels too much it was combined with opium or morphia. Sometimes calomel with opium was found to answer better than the blue pill. To allay irritability of stomach counter-irritants to the epigastrium were sometimes resorted to. The effervescing draught with the addition of twenty drops of tincture of opium was, however, mainly relied on. When prostration ensued the entire dependence was on the use of sulphate of quinia, in conjunction with brandy, essence of beef—given with great promptness and regularity. Pills of opium and tannin, or of one-sixth of a grain each of sulphate of morphia and nitrate of silver were valuable remedies to arrest the inordinate action of the bowels. In the cases of hemorrhage from the bowels, the best remedy was found to be the spirits of turpentine. When there was much tenderness of the epigastrium a blister to that region was found to act beneficially.

Many other remedies, we are told, were, as a matter of course, required to fill up this outline of treatment, an account of which it was found unnecessary to enter upon.

A short notice of the mortality of Brooklyn is communicated by Dr. Charles S. Goodrich, and a report presented from the Committee on Vaccination, accompanied with the recommendation to solicit from the legislature of New York, a law "which shall authorize and empower the trustees of each of the several school districts in the State, to exclude from the benefits of public instruction all who have not been vaccinated;" it being left to the trustees so to exclude or not the unvaccinated, according as public opinion in each locality may dictate. A law from which we should anticipate not a particle of good to result.

The remainder of the volume, with the exception of the portion devoted to the minutes of the session of 1858, is taken up with an abstract of the transactions of the first twenty-five sessions of the Society, held previously to the year 1832. Interesting as much of the matter embraced in this abstract confessedly is, it would extend our already too protracted notice of the New York Society's transactions to a still more unreasonable length.

D. F. C.

ART. XVI.—*Reports of American Institutions for the Insane.*

1. *Of the New Hampshire Asylum, for the fiscal year* 1858–9.
2. *Of the McLean Asylum, for the year* 1858.
3. *Of the Butler Hospital, for the year* 1858.
4. *Of the Retreat at Hartford, for the fiscal year* 1858–9.
5. *Of the New York City Asylum, for the year* 1858.
6. *Of the Pennsylvania Hospital for the Insane, for the year* 1858.
7. *Of the Friends' Asylum, for the fiscal year* 1858–9.
8. *Of the State Hospital, of Pennsylvania, for the year* 1858.
9. *Of the Western Pennsylvania Hospital, for the year* 1858.

1. THE last Annual Report of the Superintendent of the *New Hampshire Asylum for the Insane*, contains the following statistics for the fiscal year terminating with the 31st of May, 1859:—

	Men.	Women.	Total.
Patients at the beginning of the year . . .	88	81	169
Admitted in course of the year	55	43	98
Whole number " "	143	124	267
Discharged, including deaths	49	36	85
Remaining at the end of the year . . .	94	88	182
Of those discharged, there were cured . .			31
Died	8	6	14

Causes of death.—Apoplexy, 2; exhaustion of chronic mania, 3; maniacal exhaustion (acute), 3; organic disease of brain, 3; chorea, 1; tubercular consumption, 1. "The remaining one was brought to us in the last stage of a complicated disease, and died on the fourth day."

One of those who died was eighty years old, and two between 60 and 70 years. Of the patients who were discharged unrestored to their normal mental condition, seven had been inmates of the asylum less than one month each, and thirteen less than two months each. In allusion to these facts, Dr. Bancroft makes the following pertinent remarks:—

"Nothing can be more hazardous to the prospect of recovery than to make a residence of so short a period the test of the value and success of hospital treatment. A very small number recover within this short time, but in far the larger, it is not reasonable to expect it; and frequent changes in the plan of treatment in this, as in other diseases, are attended only with evil. We often see the chances of recovery in hopeful cases sadly damaged by this ill-advised proceeding. To propose a *few weeks'* treatment in a case of melancholia, originating in depreciated vitality, is only to squander effort without rational hope of success." He then proceeds to condemn the practice, "not uncommon," of removing patients who have had acute mania from the asylum as soon as they have become tranquil. "These persons are often found unable to bear the excitements of society, and return with mania rekindled and vastly diminished hopes. Could wisdom and prudence guide the admission and removal of patients, the record of complete recoveries would be much enlarged, and that of chronic cases diminished.

In reference to the etiology of mental disorders, the report contains the subjoined observations, to which we can append our unqualified endorsement:—

"The real cause is often so complicated with accidental matters that its separation is no easy task; and besides, material facts are so interwoven with private relations as to render access to them highly improbable. It therefore often occurs that the causes assigned have merely an accidental relation to the case. The previous history, in connection with the symptoms, of individual cases of insanity, goes to show that the number of attacks originating in a single demonstrable cause is very small. In rare instances, reason is prostrated by a sudden and overwhelming emotion; but in far the greater number the causes are complex, and intimately woven with the life of the individual. The apparent cause is merely an exciting one, and develops a pre-existing tendency." * * * *

"Thus viewed, it is of far less practical concern what particular vagaries of

opinion may prevail, than what power of resistance to disturbing influences the members of society may possess in a sound mental training. That those plans of education which provide, by light studies and reading, more for the exercise of the emotions than the cultivation of the reasoning powers, contribute to mental unsoundness, there can be but little doubt. But without discussing the relation of educational training to mental health or disease, it may be remarked that those educators of youth who, with manly firmness, and often against popular demand, insist on giving prominence to those studies and exercises which produce a sound, vigorous, and harmonious growth of the mental powers, instead of those tending merely to quicken the sensibilities, are worthy of gratitude as conservators of mental health."

2. The report of the *McLean Asylum*, the first from the pen of its present superintendent, Dr. Tyler, presents the subjoined numerical record for the year 1858 :—

	Men.	Women.	Total.
Patients at the beginning of the year . . .	89	89	178
Admitted in the course of the year . . .	76	79	155
Whole number	165	168	333
Discharged, including deaths	78	69	147
Remaining at the end of the year . . .	87	99	186
Of those discharged, there were cured . .	34	38	72
"Unfit,"—and remained but a few days . .	5	1	6
Died	9	16	25

Causes of death.—Softening of the brain, 1 ; exhaustion of acute mania, 1 ; epilepsy, 2 ; *paralysie générale*, 2 ; typhomania, 5 ; chronic insanity, or "worn out by the long continuance of perverted nervous action, with or without indications of other physical disease," 14.

Although the men's department was seldom crowded in the course of the year, the number of female applicants for admission was so great that nearly as many were rejected as received.

That portion of the report which is devoted to a discussion of the effects of the recent financial revulsion, and the subsequent increased attention to religious subjects, is worthy of transfer, without abridgment to our columns. We extract its most important parts :—

"Of the general influences which have wrought most severely with the intellectual and emotional faculties of the community during the last year, two were prominent above all others ; * * * I mean extraordinary commercial disturbance, and extraordinary religious interest. No one * * * escaped without more or less mental turmoil, directly or indirectly, from the former cause ; and the operation of the latter was hardly less universal. The attention of the whole community was turned to religious subjects, with deep and steady earnestness. * * * * Never is the sea of common life so thoroughly moved in thought and feeling as it has been moved in the past year, without a wreck of some of its fairest freights ; and the chronicles of institutions like this mark much of the damage done, and the painful process of repair, long after the storm is laid and away from the public eye. So our experience of the year has been that a large proportion of the cases of insanity which have arisen from other than physical disorders, are clearly traceable to the causes named.

"Pure intellectual action, if persistent and protracted, may, and sometimes does, produce insanity as a direct effect ; but while one person is thus made insane, scores are mentally alienated by a primary excitement and disturbance of the *emotions*, and the affection of the intellect is sympathetic and subsequent.

"A glance at the operation of the two influences noticed, will not fail to show that however much they may have overtasked the thinking powers, their disturbing, and consequently detrimental property was primarily and mainly emotional. But it is very evident that the sexes were not equally exposed to both of these causes of mental perturbation. Men certainly received the severity of the financial shock, and bore its heaviest burdens ; and gave themselves to the religious movement with perhaps as high an estimate of its importance, and with

as much readiness, determination and sincerity, as did the other sex; and therefore it would seem reasonable to expect that they would suffer in greater numbers from any unhappy mental effects resulting therefrom. But * * * facts prove that in so far as these influences have been recognized as producing insanity, females have been found the most numerous sufferers. And this disparity can only be accounted for on the ground that inasmuch as women are more susceptible to *emotion*, and are capable of deeper and stronger emotion than men, so are they more liable to mental disease from the agency of moral causes. But the number of persons mentally overthrown has been in no wise proportionate to the universality and intensity of the action of these disturbing causes. * * * * The severe discipline of daily business entanglements, and perplexities, and disappointments, safely endured, and the gentle power of true religion, have given to many a person an increased capability of self-control, the lack of which is the very essence of insanity. Whatever in the experience of the year has, on the whole, taught men to think less anxiously for themselves, and more kindly and carefully for others—whatever has effectually abated self-conceit, and led to genuine benevolence of thought and deed, has lessened their liability to mental alienation."

In the treatment of insanity, the Dr. remarks that "sulphuric ether is daily proving itself a valuable agent. * * * * The object of etherization with us, * * * * is the tranquillization of the nervous system—the producing of sleep, or, if not sleep, repose; and therefore, in the various forms of mania, melancholia, and hypochondria, of which persistent and protracted vigilance is both an attendant and feeder, * * * * and where, as is often the case, all ordinary medication has proved utterly unavailing, ether is found to be invaluable and effectual, causing more than a mere temporary effect of quiet and sleep, by a general soothing and curative influence on the system."

Total of patients in the asylum, 1818 to 1858	4,451
Discharged cured	2,069
Died	518

3. The principal items of the medical record of the *Butler Hospital for the Insane*, for the year 1858, are as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year . . .	67	73	140
Admitted in the course of the year . . .	29	18	47
Whole number	96	91	187
Discharged, including deaths	29	23	52
Remaining at the end of the year . . .	67	68	135
Of those discharged, there were cured . . .			22
Died			12

"The deaths include but one case of recent illness. In all the other cases, with one exception, the disease had existed many years."

Whole number of patients, 1848 to 1858, inclusive	861
Discharged cured	282
Died	170

The comparatively small number of admissions in the course of the year is attributed to the lack of accommodations rather than to a paucity of applicants. But few men have been rejected, although not one-third of the women for whom admittance was sought could be received. The hospital is becoming surcharged with incurable cases.

The proper mission of the medical profession is not merely the curing of disease; connected with that object rise the no less important ones of tracing human maladies to their origin, investigating their causes, and suggesting prophylactic measures. It has long since been demonstrated that but very little dependence can be placed upon the opinions of the friends of insane persons in respect to the causes of the mental disorder of the latter. No physician can for any considerable period be connected with an institution for the insane, without conviction of the fact by his own observation and reflection. Hence

the superintendents of our hospitals have, in latter years more than formerly, turned their attention to the more remote influences in the etiology of mental alienation. As this course has been pursued, stronger and still stronger has become the conviction that, in a very large proportion of psychical maladies, the attributed causes are merely accidental or incidental circumstances or events of life, which either have no connection, as productive agents, with the disorder, or, at most, are the last of a long train of generating influences, the first of which was in active operation during the earlier periods of the patient's existence. In the report before us, Dr. Ray discusses, somewhat elaborately, first the question whether mental disorders are increasing, and, secondly, the influence of education in the production of them. After stating the results of the censuses of the insane in several countries at different periods, in all of which the last census showed a much greater proportion of insane, as compared with the whole population, than did the first, he proceeds as follows :—

"These results may only indicate the greater accuracy which repeated investigations generally produce; but if they do not show an appalling increase of the disease, they do show an amount of it which, a few years since, before its dimensions were so carefully measured, would have been regarded as almost incredible. When we consider, in this connection, the well-authenticated fact, that the prevalence of insanity is proportioned somewhat to the degree of cultivation and refinement which the people have reached, the conclusion seems to be inevitable that much of it originates in the incidents and conditions peculiar to the civilized state. The laws of physiology might have led us to expect this result. The judicious use of an organ, we know very well, increases its power and confirms its health; but excessive exercise—that which requires an undue share of the vital energies—leads to an unhealthy condition. Every advance in civilization implies additional cerebral effort. The proportion of those who use their brains for anything beyond the ordinary functions of life, is increased by it; and with this fact is necessarily found another, viz., that the proportion of those who, in one way or another, use their brains immoderately or injudiciously, is also increased. * * * *

"We are not to forget also, that, under the appliances of civilization, the normal hardihood and elasticity of the brain are rather diminished than increased, so that it often fails, less in consequence of its efforts than of its feeble power of endurance. This kind of enfeeblement it shares in common with the other organs; and it would be as idle to deny the fact as it would to deny that gout, consumption, and enlargement of the heart, are indicative of that vital deterioration produced by the luxuries and trials of civilized life. It certainly will not be denied that the standard of health has been somewhat lowered among us during the last fifty years; and such being the case, we have no reason to suppose, other things being equal, that the brain alone has escaped the general fate. But other things are not equal. In addition to the deteriorating influences which affect all the organs alike, the brain, as we have already remarked, is subjected to a strain which has been steadily increasing with the increasing wants and excitements of life. And here we must bear in mind, what is sometimes practically forgotten in discussions of this subject, that the brain is the material instrument, not only of reason, but of the emotions, sentiments, and propensities. * * * * Hard thinking, or mere thinking of any kind, seldom of itself produces insanity. Although the most powerful intellects may, unquestionably, give way under immoderate efforts, yet there are agencies far more potent than this in disturbing the healthy balance of the mental faculties. Life is full of influences and incidents productive of strong and especially of depressing emotions. * * * *

"The indirect influences of civilization upon the mental health, are not less pernicious than those which bear directly upon the mind. The arts of luxury, the refinements of pleasure, the privations and discomforts of poverty, with its bad air, and deficient, unsuitable food; fashionable habits and practices, these are agencies which exhaust the vital energies and prepare the way for numberless disorders of body and mind. The 'ill-health' so common among our people as to become a social institution, frequently involves the brain and nervous system in the morbid process. This effect may not always appear in some form of

insanity, for it is now witnessed with frightful frequency in various cerebral affections, which blast the mental faculties and shorten existence. * * * * Indeed, were we to indicate that feature in the medical constitution of our times which distinguishes it from all others, it would be our large proportion of cerebral affections. In view of these facts, and bearing in mind, too, that every form of nervous disease is more or less propagated by hereditary transmission, it seems impossible to resist the conclusion that every advance in civilization has been accompanied by an increasing proportion of mental diseases. * * * *

"It may be fairly questioned whether the evil in question is necessary and inevitable, and whether, like other evils dependent on human frailty, it may not be removed or diminished. In a great measure, no doubt, the remedy is within ourselves, for much of the evil originates in habits and opinions that have no better support than the fashions and prejudices of the times. The difficulty is to make people regard the matter in this light—to recognize an error which ministers to their pride, vain-glory, or some other selfish sentiment. But the difficulty is not so great that we need refrain, on any suitable occasion, from bearing our testimony against the unhealthy practices of our times, whether men will hear, or whether they will forbear. * * * *

"Much of the prevalent mental infirmity may be fairly traced to the popular modes of education, which bear the characteristic marks of the spirit and temper of the times. * * * * To say that the amount of lesson and task-work imposed upon the young while at school, is always, or generally, determined by a careful consideration of the laws of physiology, and a scrupulous regard to the results of experience, would be to utter the broadest possible irony. To know what amount of work may be safely put upon the youthful brain, having reference to age, constitution, and endowment, would seem to be a matter of paramount importance, to be determined by all the light derivable from experiment and observation; but practically it is made subordinate to another and a very different question, viz., how much will satisfy the public; that public which mistakes the glitter of display for solid acquirement, and measures the skill of the teacher by the rapidity with which the pupil is pushed forward. * * * * Speed is the only test of merit. Lesson is piled upon lesson, the hours of study are increased, and the active irritable brain of tender youth is habitually forced to the utmost power of effort."

The author proceeds, at considerable length, to show that the amount of intellectual labour imposed upon pupils in the schools is too great, that the accomplishment of it requires mental application during too large a number of hours daily, and that, some of these hours often being in the evening, the brain is, thereafter, not in a suitable condition for sleep. "The mind," says he, "is swarming with verbs, and fractions and triangles, and a tedious hour or two must pass away, before it falls into a restless, scarcely refreshing slumber."

Arriving at the discussion of the effects of this course of education, he says: "The manner in which the evil is manifested is not very uniform, but however various the results, they agree in the one essential element of a disturbed or diminished nervous energy. It rarely comes immediately in the shape of insanity, for that is not a disease of childhood or early youth. It impairs the power of concentrating the faculties, and of mastering difficult problems, every attempt thereat producing confusion and distress. It banishes the hope and buoyancy natural to youth, and puts in their place anxiety, gloom, and apprehension. It diminishes the conservative power of the animal economy to such a degree, that attacks of disease, which otherwise would have passed off safely, destroy life almost before danger is anticipated. Every intelligent physician understands that, other things being equal, the chances of recovery are far less in the studious, highly intellectual child, than in one of an opposite description. Among the more obvious and immediate effects upon the nervous system, are unaccountable restlessness, disturbed and deficient sleep, loss of appetite, epilepsy, chorea, and especially a kind of irritability and exhaustion which leads the van of a host of other ills, bodily and mental, that seriously impair the efficiency and comfort of the individual.

"I have said that insanity is rarely an immediate effect of hard study at school, but I do not doubt that it lays the foundation of many a later attack. When a

person becomes insane, people look around for the cause of his affliction, and fix upon the most recent event apparently capable of producing it. *Post hoc propter hoc*, is the common philosophy on such occasions. But if the whole mental history of the patient were clearly unfolded to our view, we should often find, I apprehend, at a much earlier period, some agency far more potent in causing the evil, than the misfortune, or the passion, or the bereavement, or the disappointment, which attracts the common attention. Among these remoter agencies in the production of mental disease, I doubt if any one, except hereditary defects, is more common at the present time, than excessive application of the mind when young."

4. The report of the *Retreat for the Insane*, at Hartford, contains a synopsis of the results of the last official year, from which we select the most valuable items:—

	Men.	Women.	Total.
Patients in the Retreat, March 31st, 1858 .	102	106	208
Admitted in course of the year . . .	63	78	141
Whole number	165	184	349
Discharged, including deaths . . .	60	74	134
Remaining, March 31st, 1859 . . .	105	110	215
Of those discharged, there were cured . .	25	36	61
Died	7	3	10
Whole number of patients, 1824 to 1859, inclusive	1608	1799	3407
Discharged cured			1643
Died			347

Causes of death the past year.—Exhaustion, 4; general debility, 2; epilepsy, 3; suicide, 1. The deaths, reckoned upon the average number of patients in the house, during the year, were 4.6 per cent.

Aside from numerical tables, almost the whole of Dr. Butler's report is occupied by an exposition of the character of the Retreat as a charitable establishment—its foundation, the sources of its finances, its connection with the State, &c. &c. From the small remaining portion we make the following extract:—

"Our percentage of recoveries will be largely increased, and the proportion of incurable cases in the community will be correspondingly diminished, when common sense views of insanity shall prevail, when this shall be treated like other diseases, with a fairness, promptitude, and decision corresponding to the gravity of the disease, and the importance of the organs implicated by it. I know of no other disease which so imperatively demands that it be met, on the part of friends, with frankness and promptitude towards the sufferer, and with a reasonable confidence and patience towards those to whose skill, and care, and accumulated experience, the sufferer is intrusted. It is a reasonable claim, the justice of which should never be overlooked, that one who is willing to accept the grave responsibility of treating a case of insanity, should ever find his feelings and opinions treated with respect and deference."

5. The medical annals, for the year 1858, of the *New York City Lunatic Asylum*, furnish the subjoined numbers:—

	Men.	Women.	Total.
Patients in the Asylum, January 1st. . .	251	376	627
Admitted in course of the year	129	226	355
Whole number	380	602	982
Discharged, including deaths	111	216	327
Remaining, December 31st	269	386	655
Of those discharged, there were cured . .			164
Died	30	62	92

Causes of death.—"Consumption, 30; epilepsy, 8; *paralysie générale*, 8; congestio cerebri, 6; senectus, 6; typhomania, 5; paralysis, 5; chronic diarrhœa, 5; inflammation of the brain, 4; erysipelas, 3; diarrhœa, 3; ascites, 2; submersion, 2; pneumonia, 2; hydrops, 1; apoplexy, 1; peritonitis, 1."

Fifteen years ago, of all the dens of human wretchedness to be found in the United States, the New York City Lunatic Asylum was probably the paragon. It furnished the best practical illustration and demonstration of how not to do it, that we have ever seen, among institutions for the insane, on this side of Constantinople. Indeed, it is doubtful whether it be just to make an exception of the Timar-hané of the Turkish capital. For these reasons it is with an especial pleasure that, from year to year, we notice the improvements at the Asylum on Blackwell's Island.

"On the 9th of March," says Dr. Ranney, "all apparatus used for restraint was removed from the halls, and in no instance was anything of the kind applied until the 22d of July, when it was found necessary to use a bed-strap for two days, to keep a poor paralytic in bed. Since that time, the bed-strap or the common restraining strap may have been used on half a dozen occasions, a few hours. This lessening of restraint has certainly had a favourable influence on the patients. There have been fewer accidents than usual, and none which could be directly attributed to this omission — those occurring having been among patients who had previously exhibited no disposition calling for restraint. Extreme cases will require it, but I find these to be rare. More evils are likely to arise from a too free use of straps, even in our best regulated asylums, than from the adoption of the non-restraint system. A greater loss of clothing followed the immediate removal of the straps, but the substitution of strong quilted coverlets for blankets, and the exercise of more care in making dresses for the few who destroyed their clothing, remedied this evil."

6. In the report for 1858 of the *Pennsylvania Hospital for the Insane*, Dr. Kirkbride says: "I have again to report an almost constantly crowded state of the hospital, and a frequent inability to receive all who applied for admission. I trust that this unpleasant statement is now given for the last time. The progress already made towards the completion of the new hospital, is such as to justify the reasonable expectation that before the close of the present year it will be occupied, and that in the future no proper case need fail to obtain suitable accommodations."

	Men.	Women.	Total.
Patients in the hospital, Jan. 1st, 1858	117	113	230
Admitted in course of the year	63	68	131
Whole number	180	181	361
Discharged, including deaths	65	66	131
Remaining, Dec. 31st, 1858	115	115	230
Of those discharged, there were cured			63
Died			18

Causes of death.—Acute mania, 2; softening of the brain, 3; tubercular consumption, 2; convulsions, 1; chronic epilepsy, 1; purpura, 2; old age, 1; dysentery, 1; chronic diarrhœa, 1; scirrhus, 1; exhaustion from long excitement, irregularity in taking food, and loss of sleep, 3. In one of these cases, the patient, a woman, was ninety-three years old at the time of her admission.

The elaborate and enlightened system of moral treatment which has for many years been pursued at this institution, is continued, vigorously as heretofore, and gradually expanding with the progress of time, and the suggestions of more enlarged experience.

"In the future," says Dr. Kirkbride, "an extended system of horticulture will take the place of farming, and, while even more desirable for our patients, it is believed will not be less remunerative to the institution." From the proximity of the hospital to one of the largest and most wealthy of American cities, it is reasonable to conclude that the proposed system would enhance its pecuniary receipts, while it would greatly conduce to the beauty of the establishment. We hope to see the day when an extensive *botanic garden* will flourish within the inclosures of this institution.

In the workshop, "most valuable labour has been done by patients during the past year, not only in assisting the carpenter, but in originating and carrying out much that was entirely novel, and very creditable to their skill, ingenuity,

and perseverance. Several specimens of this kind are now in the possession of the hospital, and a number of the illustrations for the philosophical lectures have been thus provided. It is not too much to say, that in some cases an almost entire restoration from mental disease has been effected by an individual becoming fond of mechanical pursuits, and having proper facilities afforded for this kind of occupation."

But the most prominent of all the measures constituting the scheme of moral treatment are the *Evening Entertainments*—by lectures and other means of instruction or amusement. It may safely be assumed that no other hospital in the world has a provision of this kind so extensive, so well-devised, and so perseveringly and effectually prosecuted. The report contains a synopsis of the "Thirteenth Annual Course" of these "Lectures and Evening Entertainments." The course occupied one hundred and twenty-two evenings, the subjects treated were diversified, and a large proportion of them illustrated by pictures enlarged by the compound microscope, or by other suitable apparatus. "The attendance has been large and the demeanor of those present almost invariably all that could be desired."

	Men.	Women.	Total.
Whole number of patients, 1843 to 1858, inclusive	1671	1518	3189
Discharged, cured	802	760	1562
Died	204	145	349
Single	881	606	1487
Married	721	719	1440
Widowed	69	193	262
From 20 to 30 years of age at 1st attack	608	561	1169
From 30 to 40 " " " "	437	349	786

	Cases admitted.	Cases cured.
Mania	1549	917
Melancholia	822	424
Monomania	458	194
Dementia	349	26
Delirium	11	1

From a section of the report which is devoted to the *importance of a correct public sentiment on the subject of insanity*, we make some extracts:—

"While it must be conceded that there has been a vast improvement in public sentiment in reference to the nature of insanity, and in the character of the institutions specially devoted to its treatment, it cannot be disguised that there is still abundant room for progress in both. A correct and enlightened public sentiment in regard to these, lies at the basis of all radical improvement. It is not enough that the comparatively few who are somewhat familiar with diseases of the mind, should entertain sound views in regard to them. Every advance in the general sentiment of a whole community, is of infinite service in taking from insanity some of its painful attributes, and in securing for it that kind of treatment which, in a large majority of cases, will prove the means of restoring the sufferers to health and usefulness.

"One of the first steps in the right direction, is the general conviction that insanity is a functional disease of the brain, just as dyspepsia may be a functional disease of the stomach; that every individual that has a brain may, at some period of life, and under some circumstances, often beyond his control, have functional disturbance of that brain, just as much as he that has a stomach may suffer from some of the Protean forms of derangement of that organ. This is the first great step that costs us something of our pride of intellect. * * * *It is a very common subject for remark about hospitals for the insane, how frequently visitors to these institutions, who have paid little attention to the subject, speak as though they were making their observations in reference to a form of disease entirely beyond the accidents of their lives, or a condition of humanity that by no possibility might be their own.*"

We drop, for the moment, our quotation, merely for the purpose of adding our

confirmatory testimony to the principal idea contained in the sentence which we have italicized.

"No year passes in any large community without a development of this disease in some one in whom it had never been anticipated, whose friends are sure to exclaim, on its occurrence, 'How strange! of that whole family, or of all our acquaintances, this was the very last we should have supposed would ever have been thus afflicted.' * * *

"The *nomenclature* formerly applied to insanity, and to establishments for its treatment, and unfortunately not yet entirely given up, is far behind the age, and has done more harm in influencing men's minds in reference to both, than is generally supposed. In the days when *cells* and *keepers* were spoken of, the natural inference was that they belonged to prisons, for these are prison terms. *Even now, it occasionally happens that such terms are heard from individuals who themselves occupy smaller apartments, more inconveniently located, more poorly warmed, ventilated, and lighted, and not better furnished, and yet who would be greatly surprised if asked whether they had comfortable 'cells' in the fourth or fifth story of their hotel or boarding-house.* There is no reason for thus designating the better of two chambers, that would not apply to the poorer of the two; nor should a nurse and companion of an insane person be styled a *keeper* any more than if having the care of a case of ordinary sickness. So of the institutions themselves; if they are for the treatment of disease, they should be called *hospitals*—a title which is not likely to be mistaken, and which of itself indicates why patients are sent to it. * * * The simple derivation of the word *lunatic*, or the definition of it given by one of our best medical dictionaries—'moon-struck'—shows that it has nothing to do with insanity, and ought not to be employed in connection with that disease.

"Another error— formerly very prevalent, and although now discarded by the most intelligent portion of the community, is still occasionally alluded to—is that of regarding insanity itself, or the residence of an individual in an institution for its treatment, as a reproach, or as destructive of future prosperity in life. The accident of having an attack of disease to which all are liable, and especially if without any direct agency of our own, or certainly without anything on our part that was dishonourable or criminal, can be no reproach to any one. A sensible man, when sick, will adopt such means for the restoration of his health as the experience and advice of honest and intelligent men give him reason to suppose will be most likely to effect that object; and if that end will probably be soonest and most certainly attained by entering a hospital, it would clearly be an imputation upon the sound judgment of himself and friends if he did not promptly avail himself of any advantages it might afford. * * * Those who have recovered, and have the mind to contemplate this malady in its true light * * * can hardly fail to impress every one whose good opinion is at all worth having, with the conviction that, whatever may have been the nature of their illness, their recovery has been complete, and without the slightest impairment of their mental powers, or any diminution of their capacity for usefulness in life."

7. At the *Asylum for the Relief of Persons deprived of the Use of their Reason* (Friends' Asylum), the number of patients on the 28th of February, 1858, was—

	Men.	Women.	Total.
	29	33	62
Admitted in course of the year	14	10	24
Whole number	43	43	86
Discharged, including deaths	12	12	24
Remaining Feb. 28, 1859	31	31	62
Of those discharged, there were cured	6	5	11
Died	2	1	3

Causes of death.—Exhaustion from epilepsy, 1; acute meningitis, 1; exhaustion from acute mania, 1. The last two died each three days after admission.

Whole number of patients, 1817 to 1859	714	673	1387
Discharged cured	330	296	626
Died	99	92	191

Of 602 patients admitted since 1842, 203 were between 20 and 30 years of age at the time of first attack, and 116 between 30 and 40 years.

Dr. Worthington writes as follows in regard to the participation of the emotions in the mental disorder of the insane:—

"In many recent cases of insanity, the disease is principally manifested in the emotions and moral feelings of the patient, rather than in the intellectual processes, which are frequently but little affected, notwithstanding the existence of positive delusions. This emotional disorder is generally observed for some time before decided symptoms of mania make their appearance, and by some writers is considered as constituting of itself a distinct form of insanity. However this may be, it is frequently a prominent feature in mania, the delusions of which sometimes appear to grow directly out of it. The false ideas respecting the conduct and motives of their best and nearest friends and relatives, which are so commonly manifested by the insane, and the animosity sometimes displayed by patients who have been discharged imperfectly cured, towards those who have had the care of them in public institutions, may be considered as originating in this morbid condition of the emotions and moral feelings. Where delusions are the direct consequence of this emotional disturbance, it is manifest that arguments addressed to the reason alone can have but little effect on the patient. When they are, however, addressed to the moral feelings and sensibilities of the patients, in the form of constant endeavours to benefit, to soothe, and to encourage them, the delusions will gradually vanish in proportion as the emotional disturbance diminishes."

We make two extracts from the remarks upon the treatment of the insane:—

"Moral treatment, in its widest sense, embraces everything that acts beneficially upon the disordered sensibility of those affected with insanity, and tends to restore it to a natural and healthy condition. Everything that promotes a cheerful and contented spirit, that occupies the mind agreeably, to the exclusion of morbid fancies, or that interests or amuses the patient, may be employed in the moral treatment of the insane.

"The influence of the insane on each other is believed to have a salutary tendency. A cheering word spoken by one who has himself been a sufferer and is recovering from the disease, to a newly-arrived patient, has frequently been a source of comfort and satisfaction to the latter, while the sympathetic feelings thus awakened and called into exercise, have tended no less to the benefit of the convalescent. The exercise of the social feelings among the insane has the same effect that is produced by the means employed in their moral treatment, and prevents that concentration of the mind upon the subject of their delusions, in which they are prone to indulge, and promotes a more natural and healthy condition of the emotions and sentiments. The occupations and amusements, in which they share in common, as well as their community of suffering, tend in a great degree to keep up a kind feeling amongst themselves, in the exercise of which the general comfort is greatly promoted. The amount of entertainment they are capable of affording each other in the intervals of their own distresses, is much greater than would be supposed by any one not familiar with the disease. One man at present in the institution, who is the greater part of the time impressed with the belief that he is 'almost gone,' is an excellent ventriloquist and mimic, and often amuses his companions by his ludicrous delineations of character. Another, who fancies that he has no stomach, will sometimes, by an indescribable sort of pleasantry, in which no trace of insanity is perceptible, attract the attention of all in the room, and appear entirely to forget for the time his own unhappiness, in contributing to the amusement of others. The groundless pretensions of a third to superior knowledge and attainments, have often been the subject of the harmless wit of his companions; and a timely remark directed by one patient against the irrational conduct or ideas of another, has sometimes produced an impression that has been of lasting benefit."

8. The influx of patients at the *State Lunatic Hospital of Pennsylvania* has been so great, that the trustees of that institution urge, as one measure of relief, "an increased provision for the insane in the western portion of the State." This looks favourable to the welfare of the establishment, the last report of

which will command our attention after we have paid our respects to Dr. Curwen.

	Men.	Women.	Total.
Patients in the State Hospital, Jan. 1st, 1858	130	120	250
Admitted in course of the year	97	54	151
Whole number	227	174	401
Discharged, including deaths	77	57	134
Remaining December 31, 1858	150	117	267
Of the patients discharged, there were cured	25	11	36
Died	9	5	14

Died of epilepsy, 4; inflammation of brain, 1; exhaustion of chronic mania, 5; disease of the brain, 4.

"Three evenings of each week, during six months of the year, are devoted to lectures on a great variety of interesting subjects, with illustrative experiments and drawings, and to exhibitions of the magic lantern."

Fifty-five newspapers are regularly and gratuitously sent to the hospital by their publishers.

Whole number of patients since opening	622	427	1049
Discharged restored	104	70	174
Died	94	53	147

A pretty large proportion of Dr. Curwen's report, like that of Dr. Ray, is devoted to the subject of education in its relation, as cause to effect, with insanity. The general views of the two authors are very similar, and hence the necessity of copying so extensively as we otherwise might from the report before us, is avoided.

"The great tendency of the period is to over-exertion and stimulation in every department—haste to be accounted learned, as well as haste to be rich; and the moral of the fable of the hare and the tortoise is more frequently neglected than heeded. * * * * Under ten years of age very little mental effort should be required of children; and they should be allowed a large amount of exercise, bodily health and strength being more necessary and desirable than any learning which, at that age, they may be supposed capable of acquiring. * * * * We are fully impressed with the belief that the youth of both sexes, between the ages of ten and twenty, are expected to perform duties much beyond what, in strict justice to discipline of mind and health of body, should ever be required of them.

"The good old rule of what is worth doing is worth well doing, is too much overlooked, and instead of laying deep and strong the foundations, and impressing on the mind carefully and thoroughly the fundamental principles, they are passed over hurriedly and slightly, and ever after the superstructure is found weak and defective where it should be firm and steady. In addition to this, too much is required, and too many things are embraced in the course, so that it is impossible for the individual to give that time and attention which are necessary to a correct understanding of each, and thus a superficial and desultory habit is formed, and the mind is unfitted for any steady, continued process of thought.

"But while the mind has been kept hour after hour thus engaged, now on one study, then on another, the body has been suffering the penalty of the close confinement; the limbs and the back ache, the head feels heavy and dull, and an indescribable feeling of uneasiness and restlessness comes over the whole frame. * * * * The predisposition to mental disease thus formed by over-exertion of the mind, and neglect of the bodily health, is so great that its importance deserves to be much more seriously considered and estimated by those having the direction of the studies of the young, because to them alone can the community look for such amendments in the course of studies as will remedy the evils. As a general rule, too great a diversity of studies is required, and in many cases part are a class far beyond the capacity of those who are required to learn them. Those studies which would lead to a more intimate acquaintance with the ordinary duties of life, and the constant demands of an age essentially practical, are only slightly attended to, while the higher and more abstruse

studies, which can only be acquired by matured minds after long and patient labour, are pressed upon the attention of those entirely incapacitated from understanding them."

9. The farm upon the Monongahela River, which was bought as a site for the new buildings of the *Western Pennsylvania Hospital*, has been sold, and another, more suitably adapted to an institution of the kind, has been purchased. It is on the bank of the Ohio River, about seven miles from Pittsburg. It contains about one hundred acres, with quarries of stone which may be cheaply wrought, and a spring which furnishes an abundant supply of water, at an elevation such that it may be carried to every story of the proposed hospital with no force other than its own.

	Men.	Women.	Total.
Patients in the hospital Dec. 31, 1857 . .	48	26	74
Admitted in course of the year	48	35	83
Whole number	96	61	157
Discharged, including deaths	44	23	67
Remaining, Dec. 31, 1858	52	38	90
Of those discharged, were cured	24	10	34
Died	8	4	12

Died of dysentery, 2; consumption, 1; inflammation of the bowels, 1; disease of the heart, 1; exhaustive mania, 3. Of the remaining four, the causes of fatality in three are thus stated: "One was brought to us from jail in an exhausted condition, and labouring under acute dementia, after a confinement there of several months, in a badly ventilated apartment, and without care or proper food; and notwithstanding every attention was given him, he soon sank and died. Another was admitted who had been for some time confined in jail, and while there was inhumanly beaten by criminals with whom he was associated—his jaw broken, his body covered with severe bruises, and otherwise so severely injured that he soon died. The last of this sad catalogue was brought to us from a neighbouring county poor-house, his body covered with deep and extensive burns received by falling on a stove used for warming his apartment, and so exhausted as to preclude all hope of his recovery. We allude to these facts because there are those in the community, of fair intelligence and humanity, who think that poor-houses and jails afford all the care and comforts that the insane need."

"A few cases of diarrhœa and dysentery occurred, but they were among those difficult to control in diet, or worn down by disease. With these exceptions, the health of the household has been good."

Although a new ward has been constructed, the hospital is crowded, and doubtless will remain so until the new establishment shall be ready to receive the patients. With the numerous indications of the necessity for a large hospital in the vicinity of Pittsburg, it cannot be that the Government of the wealthy State of Pennsylvania will permit that necessity to remain long unsupplied, by an omission to furnish such funds as may be requisite for the construction of the proposed buildings for the Western Pennsylvania Hospital.

Dr. Reed relates the cases which we are about to copy, as illustrations of the ability to manage, without corporeal restraints, in a hospital, patients who, in other places, have been subjected to them. We quote them not for this purpose alone—for that fact has already been demonstrated, by abundant proofs, to our readers—but as a current record of the evidence of the continued prevalence, to a certain extent, of those notions of the treatment of the insane which have come to us gray with the mists of a remote antiquity. We have often thought that if the members of the medical profession would but become interested in this subject, and use such endeavours as would be neither burthensome nor laborious, the time would soon arrive in which no such history as that which we here transfer to our columns, would come to us from any section of our broadly-extended country:—

"A respectable farmer was brought to our doors from a neighbouring county, securely tied with ropes, and in care of five strong men. This patient was at

once set free, and has been an inmate of the first male ward ever since, without restraint, and has conducted himself with the utmost decorum.

"Another, who had been chained for several months to a log, in his father's house, proved, from the hour of his admission, quiet and peaceable, and a valuable aid to the attendants in taking care of others.

"Another, who had been hand-cuffed and chained by the ankle to a stone floor, in jail, fed on insufficient food, destitute of clothing, and made a laughing-stock for criminals, after a few days' residence with us proved to be useful in painting, frescoing, and in various kinds of work, and was soon taken into the employ of the hospital.

"Another was received who had been confined in his own house, in a wooden cage or box, five by seven feet, during all of last winter, without heat and often destitute of clothing. This gloomy abode had no opening except through the heavy bars of his window, and its floor had conveniently placed on it a set of stocks, in which he was placed when excited. His food was cast to him through the window bars, and once in two weeks he was removed for the purpose of cleansing. He was brought to us hand-cuffed, and left with the usual warning that he was 'dangerous.' Six months have now passed, and we have never seen the least occasion for restraint; he has behaved with propriety, and has often been seen doing kind offices to other patients."

The moral treatment at this hospital appears to be conducted upon a scale as broad as can reasonably be expected at an infant institution, with its character just developed, struggling with many difficulties, yet confidently looking to the great public patron. the State, for that aid which shall bring it forward to a vigorous manhood, wherein the benefit may be reciprocated by the restoration of health and of reason to the afflicted citizens of the Commonwealth.

P. E.

ART. XVII.—*Transactions of the New York Academy of Medicine.* Vol. II., Part III. Containing, I. Anatomy of the Placenta. II. Physical and Chemical Changes in the Interior of the Body. By J. C. DALTON, JR., M. D., &c. New York, 1859. 8vo. pp. 42.

IN this part of the Transactions of the New York Academy of Medicine, are contained two memoirs, by Prof. Dalton, of the same high character as those hitherto contributed by himself, by Dr. Isaacs, and by one or two others, to the archives of this Society, and we must congratulate the Academy on ranking among its members such capable and active investigators as those to whom we have referred. A few memoirs like those of Dalton and Isaacs atone for a multitude of commonplace productions, such as in this prolific literary age are constantly being furnished by those whose highest ambition seems to be to theorize without observation, and attempt to enlighten in regard to those things which every educated physician is presumed to understand, and which the uneducated can more readily comprehend by a few minutes' study of a text-book. Like most other societies, the New York Academy of Medicine occasionally suffers by being called upon to father the offspring of this latter class of writers; but we must, nevertheless, bear testimony to the originality and excellence which characterize several of the published papers of this society—papers which have gained for it a position among scientific associations.

In the first of the papers before us, relating to the anatomy of the placenta, Dr. Dalton gives us the results of his own investigations, accompanied with a sufficiently full statement of the views held by previous observers. This memoir was communicated to the Academy on the 2d of June, 1858—over a year since—and the conclusions have been subsequently published in the author's treatise on physiology. It is, therefore, unnecessary for us to notice it in detail. We would only say that, by his zeal and ability, Dr. Dalton has cleared up the obscurity which previously enveloped the subject of his researches, and has, we think, by his ingenious method of procedure, demonstrated beyond a doubt the

existence of placental sinuses, and their communication with the vessels of the uterus. His labors, therefore, confirm the views of the Hunters, Reid, and Goodsir, and are in opposition to those of Lee and Robin. The injections of the Hunters and Weber were, however, open to the objection that the vessels may have been ruptured, thus allowing the filling of the placental vessels from those of the uterus. But by substituting air for the substances ordinarily used in injection, Dr. Dalton has been able to obviate any liability to this accident, and has, consequently, more positively demonstrated the point in question than his predecessors.

The second memoir "On the Rapidity and Extent of the Physical and Chemical Changes in the Interior of the Body," was read in March last, and though not possessing the originality of the first, is, nevertheless, very interesting, and the information it contains is communicated in an agreeable and forcible manner. The essay bears evidence of being the result of considerable research and reflection, and will amply repay the perusal of those who are unaware of the extent to which the zoo-chemical processes of the body are conducted, and have not the opportunity of referring to the original investigations of Vierordt, Bidder and Schmidt, Colin, and others who have identified themselves with this department of biological science. The main facts will also be found incorporated into the author's excellent treatise on physiology; but in the memoir before us they are presented in a much more connected manner than is possible in a work devoted to physiology in general, and therefore exhibit a more striking view of those great organic actions which maintain the integrity and vitality of the animal system. W. A. H.

ART. XVIII.—*Report of the Committee of the City Council of Charleston, upon the Epidemic Yellow Fever of* 1858. 8vo. pp. 69. Charleston, S. C., 1859.

THE Committee appointed by the municipal council of Charleston, appear to have investigated with a good deal of care all the facts connected with the occurrence of the yellow fever in that city, during the summer of 1858, with the view to ascertain, if possible, whether the disease was traceable to an imported contagion, or originated from evident local sources of malaria within the city.

By the results of the Committee's labours it is shown, most clearly, that the first cases of yellow fever occurred, in 1858, within a district of the city, the air of which was especially unwholesome, and in a house disgusting from the amount of filth in and about it, and that these cases could not be traced to any foreign source of infection.

The first case of the fever occurred in a city policeman, who was attacked on the tenth day of July, and died on the eighteenth. This person is supposed to have contracted the disease from a relation who came to his house on the 28th of June, from on board a steamer just arrived from Havana. The steamer, however, is reported to have been in a perfectly healthy condition, and the passenger from on board of her, just referred to, it is most certain never had the yellow fever.

The steward of this same steamer arrived in the city on the seventh of July, and put up at the same house with the policeman and his relative. He is reported to have been drunk on board the steamer; was severely beaten; continued to be drunk on shore; exposed himself to the pouring rains that fell at the time; slept in his wet clothes, so saturated with water as to require that his bed and bedding should be dried and sunned. He is represented by his family and others as one crazy from repeated intemperance and debauch. In this condition he sickened on the 12th, and died on the 15th of July, from a second attack of supposed yellow fever.

The cook of the same steamer came up to the city on the evening of the 8th July, putting up at his brother's house; a different one from that above referred to, but in the same locality. He remained with his brother until the morning

of the 10th; feeling then unwell, he determined to return to the steamer; got worse that night, and on the 11th was sent to the lazaretto, and died there on the 16th of yellow fever.

This was the first case which came from on board the steamboat, that was accused of introducing the fever into Charleston. Up to this time—twelve days from the date of her arrival—she had remained perfectly healthy, and no case occurred on board of her subsequently. Nor does there appear to be the shadow of evidence to show that any case of yellow fever appeared in the house where this person put up in the city of Charleston, sufficiently early to permit us to refer it to a contagion derived from him. The first case of disease occurred in his brother, who was seized with intermittent fever August 16th, and was discharged well on the 22d. Two cases of yellow fever, one in a female and the other in a male, occurred, it is true, in the same house, but not until September 6th and 29th. The latter terminated fatally on October 5th. Thus, it will be seen that thirty-seven days intervened between the cook's visit to his brother and the date of the latter's sickening with intermittent fever, and forty-five days before the first case of yellow fever occurred in the house where he put up.

From the first to the 12th of August, yellow fever became generally diffused over the city, attacking the unacclimated foreigner and the adolescent native; and constituting an epidemic of a fearful character, long to be remembered for its mortality.

Almost contemporaneous with the occurrence of the disease in the city of Charleston, it made its appearance at Moultrieville, Sullivan's Island, and among the garrison of Fort Moultrie. Its introduction here was attributed to a passenger landed, on the 30th of August, from on board the steamer to which reference has been already made. The gentleman was in perfect health. He did not enter the city of Charleston, but went direct to Sullivan's Island. That, however, the disease in this place could not have been derived from him is very certain. That, also, it was not generated from any contagion imported from abroad on board the vessel in which that gentleman came passenger, a simple statement of facts will show conclusively.

It is to be recollected that the steamer did not arrive at quarantine until the 28th of August, and yet five cases of yellow fever had already occurred among the soldiers, the first of them sixteen, and the last of them two days before the steamer entered the harbour of Charleston. Yellow fever, we may remark, has always prevailed on Sullivan's Island when epidemic in Charleston.

The entire number of cases of yellow fever which occurred at Charleston, during the epidemic of 1858, was 1571; of these, 1126 recovered, and 445 died.

In respect to the causes to which may be attributed the occurrence of the epidemic of 1858, the Committee refer to the filthy condition of the streets—the defective scavengering—to the employing the filth and garbage collected from the highways as a material for filling up low lots, streets, etc.; the collecting of manure heaps, cow-stables, pig-pens, etc., within the city limits; the bad construction and foul condition of privy-wells and cesspools; the crowded burial grounds which exist within the very centre of the most populous parts of the city; the imperfect system of public and private sewerage, and the condition of the public drains.

In the letters contained in the report, presenting the opinions of several of the oldest medical practitioners of Charleston, in regard to the etiology and mode of propagation of the yellow fever, there will be found a very great unanimity expressed by these gentlemen in their belief as to the local origin of the disease and its non-contagious character. They nearly all point to the fact that the limits of the yellow fever locations—the infected districts—are gradually extending themselves in proportion as in the progress of public and private improvements the low portions of the city are becoming filled up by the deposition in them of garbage, sawdust, chaff, and other refuse and decomposable materials; while there is exhibited an entire neglect of the important lessons in respect to civic hygiene derived from the experience of former years, and other cities.

The conclusion which the Committee deduce from the facts adduced by them, are:—

"That if yellow fever is introduced by importation, it cannot become epidemic,

except by *common* causes, that is, the atmosphere of Charleston must be in the same condition as the atmosphere of Havana, or elsewhere, from local causes, to produce or favor an epidemic; and if not in this like condition, no epidemic can possibly result from such importation.

"Charleston and other cities of the United States charge Havana with inflicting this terrible disease upon them; and Havana, on the other hand, attributes the sin of yellow fever to Siam—asserting that it never existed there until it was imported into the city from Siam. Be this true or not, it is very certain that it existed in Greece; and the very same disease that now prevails in the West Indies, Charleston, and other cities on the Atlantic coast, was described by Hippocrates nearly 300 years before the birth of Christ.

"This illustrious Greek," says Professor Potter, "observed the disease he so well describes in the mild climate of his native soil, almost in the parallel latitude in which we live. He speaks a language without disguise, susceptible of but one interpretation. The *tout ensemble* of his faithful picture portrays the disease in colours as glowing as those of Chisholm, Rush, Geddings, or Dickson. He enumerates the more prominent symptoms, under the following appellations: Καυσος (*causos*), a burning (inflammatory?) fever, attended with excessive thirst; Τυφος (*typhos*), a stupor or coma; Φρενιτις (*phrenitis*), an inflammation of the brain or its investing membranes (*acute delirium?*); Ικτερος (*Icteros*), a yellowness of the skin; and he caps the climax of the malignant picture by the words Μελανα εμετον (*Melana emeton*), black vomit; and Μελανων εμετον (*melauon emeton*), the vomiting black matter." * * "'In burning fevers,' says Hippocrates, 'yellowness of the skin, on the fifth day, especially if accompanied by a singultus, is a sign of great malignancy.' These symptoms are seen during every epidemic in Charleston."

D. F. C.

ART. XIX.—*Contributions to Midwifery, and Diseases of Women and Children, with a Report on the Progress of Obstetrics, and Uterine and Infantile Pathology in* 1858. By E. NOEGGERATH, M. D., and A. JACOBI, M. D. New York, 1859, Bailliere Brothers. 8vo. pp. 466.

THIS is the first volume of what is intended to be—if we understand the editors aright—an annual register of the leading contributions to obstetrics, and to uterine and infantile pathology and therapeutics—embracing a notice of every original article or monograph published during the preceding year, which appears to present anything of importance; with a record of the titles at least, of those of less value, or which are beyond the reach of the editors.

The conception and plan of the work are excellent. If these be carried out with the same ability that is evinced in the preparation of the volume before us, it cannot fail to become a most valuable repertory of the recent facts and observations, contributed by the leading contemporary authorities of our profession, especially those of continental Europe; which will thus be rendered accessible to the physicians of this country.

It is most certain that, with the large and important additions which are constantly being made to almost every department of medical science and practice, but more especially to our knowledge of the pathology and treatment of the diseases of women and children, through the medium of either monographs of more or less pretension, transactions of medical societies, or contributions to the professional journals of our own and other countries, it is with difficulty that the student of the present day is able to make himself acquainted with the actual progress and condition of our science in general, or in reference to the particular branches in which he is the most interested. Few have the time and still fewer the means to procure and consult each new medical publication as it appears, and the various professional transactions and periodicals, both domestic and foreign, with the view of culling from them whatever they may present of new and valuable. Some one with the time, talents and facilities required for its execution, must take upon himself the task of col-

lecting, digesting, and arranging the most important of their contents; presenting them in a form that shall be readily accessible to every physician, and thus place within the reach of all the results of the current labours of the entire medical profession in the investigation of the etiology, pathology and therapeutics of disease. Such is the leading object of the publication under notice. It is divided into two parts: The first is devoted to original articles, and the second to the report on the progress of obstetrics, and of uterine and infantile pathology during the year 1858. The original papers with one or two that had already appeared in the *New York Journal of Medicine*, are all contributed by either Drs. Noeggerath or Jacobi. Whether the original department is to be kept up hereafter we know not. All we learn in reference to the continuance of the work is from the following sentence towards the close of the preface. "From 1858 we intend to keep up a review of every successive year, especially with regard to German medical literature, provided that it should meet with the approval of the profession."

The first of the original articles in the present volume, is *on the induction of premature labour* by Cohen's method. It is from the pen of Dr. Noeggerath. The paper presents the history of three cases in which premature labour was induced by him according to the method referred to, and the analysis of another reported to the Rensselaer County (N. Y.), medical society, by Dr. Blatchford; with a general summary of the reasons which in the opinion of Dr. Noeggerath recommend as preferable to all others the plan proposed by Dr. Cohen.

The first question to be decided by the practitioner in any case in which delivery at the full term of utero-gestation will involve necessarily the death of the child, while it subjects the mother to much anxiety and suffering, and jeopards, also, in many cases her life, is, the propriety of procuring a premature expulsion of the fœtus. If the decision of this important question be in the affirmative, and the circumstances and period proper for the performance of the operation are satisfactorily settled, the next question of moment that presents itself is, by what means can premature labour be brought about with the greatest certainty, and with the least risk to the safety of both mother and child? Dr. Noeggerath, as we have seen, believes that the method of Dr. Cohen is the one best adapted to fulfil these conditions. This method consists in the introduction of an ordinary sized elastic catheter, through the os tincæ, several inches into the pregnant uterus, between the wall of the latter and the fœtal membranes, and then, with a syringe adjusted to the catheter, injecting a few ounces of water, heated to 90° or 100° of Fahrenheit, at shorter or longer intervals, according to circumstances, until regular expulsive contractions of the organ are induced.

The leading features and the results of the four cases adduced in the paper before us are shown by the following table:—

Authors.	Number of injections.	Duration of labour after first injection.	Fate of children.	Fate of mothers.	Reason for operation.	Remarks.
Blatchford	1	113 hours	Alive	Recovery	Contracted pelvis	Cranial presentation.
Noeggerath	2	23 "	Alive	"	Contracted pelvis	Cranial presentation.
Noeggerath	1	19 "	Dead	"	Contracted pelvis	Cross presentation; turning.
Noeggerath	1	16 "	Died soon after birth	"	Morbus Brightii	Cross presentation; turning.

Dr. Noeggerath admits that the foregoing cases are insufficient, of themselves, to establish the true value of the method recommended by him for the induction of premature labour.

The first, we are told, who conceived the idea of exciting premature contractions of the pregnant uterus with the view to the expulsion of its contents, by the injection into it of warm water, was Scheighaüser, of Strassburg, in his

work, "*Das Gebären nach der beobachteten Natur*," published in 1825. The plan thus suggested was put in practice by Dr. H. M. Cohen, of Hamburg, who called the attention of the profession to it, in a thesis written in 1846. Since then, the medical journals furnish us with the histories of some sixty cases, of prematurely induced labour, in addition to those of Dr. Noeggerath, in which Dr. Cohen's directions were imitated, and with very favourable results.

With regard to the time that elapsed from the first injection to the termination of labour, the shortest period in these cases was three hours, the longest eight days, the average period being two days. The only instance in which the operation failed is recorded in *Scanzoni's Beiträgen zur Geburtskunde*, for 1855, by Dr. Langenheinrich, of Würzburg. In this case it does not appear, however, that a fair trial of the method was made. The catheter being introduced into the womb two inches its further progress was arrested by an unknown obstacle; the water injected was accordingly discharged instantly. Now all authors agree that a considerable portion of the water has to be retained within the womb to induce efficient labour pains. The same thing happened in the second of Dr. Noeggerath's cases, and had he not after repeated attempts found out a region where the catheter could be safely introduced some four or five inches, the operation would have entirely failed. In all the sixty-two reported cases excepting three, the mothers recovered. The deaths in the fatal cases were caused by diseases unconnected with the operation; namely, two from eclampsia and one from puerperal fever. The fate of the child is noted in fifty-eight cases—thirty-six being born alive, and twenty-two (?) dead; the number of deaths corresponding pretty accurately with the number of cross presentations.

"I am sure," remarks Dr. Noeggerath, "that every one who has once tested Dr. Cohen's method, will be struck with the gentleness and promptness of its action, and the simplicity of its execution. In most instances only one or two injections were required, and the average duration of labour from the time of the first injection was two days; not one instance is known of its failure, while the prompt recovery of the mothers, with the exception of those few cases where death resulted from eclampsia, etc., gives us the best guarantee of the harmlessness of the procedure. Moreover, the apparatus required is of such a simple character, that every practitioner, residing in the smallest village, is in possession of them. The performance of the operation requires only a sufficient knowledge of the female sexual organs in the state of gestation—the only precaution to be observed is, to inject the water not with violence and force, but gently and slowly. But we meet, from time to time, with such a disposition of the internal sexual organs, that the introduction of a catheter is absolutely impossible, whether from a firm closure of the os, or from a location of the vaginal portion in an upward or backward direction so that it is out of reach. Under such circumstances, we have to resort to a preparatory treatment in order to change the condition of the lower uterine segment, a treatment which in many cases may prove sufficient to induce efficient labour pains.

"Of all means which may be chosen for this purpose, the douche is no doubt best adapted to our purpose. In acting principally upon the lower circumference of the womb, it is apt to soften the parts so open somewhat the os, and to bring the vaginal portion more in the direction of the pelvic axis. We will further remark that Cohen's method ought not to be resorted to when induction of labour is required in case of uterine hemorrhage, from whatever cause it may arise. In such cases, nothing can surpass the caoutchouc bladder plug (*Braun's colpeurynter*), which, introduced empty and then filled with iced water, at once controls the bleeding by the double action of cold and pressure, and is almost sure to induce efficient labour pains by its mere presence in the vagina."

The second original paper is on *the advantages and dangers of injecting caustic solutions into the cavity of the uterus*, illustrated by the history of four cases. It is also from the pen of Dr. Noeggerath.

From the circumstances and results of the cases detailed it appears that in one no reaction whatever followed upon the injection of a caustic agent, two exhibited very alarming symptoms, and one resulted in death.

The conclusions drawn from careful considerations based upon the results of these and other cases where the injection of caustic solutions into the cavity of

the uterus was practised, are that the dangers connected with such injections do not so much result from the passage of the caustic into the abdominal cavity through the Fallopian tubes, as from its direct action upon the uterus itself. In the cases where the milder caustics are applied, or where the organ has only a limited degree of susceptibility, the injection is followed by more or less severe endometritis, which generally terminates in resolution. But under opposite circumstances the inflammation may extend to the areolar and muscular tissues of the uterus, and finally to the peritoneum enveloping its body, producing the most disastrous form of metro-peritonitis. The impropriety must be evident, therefore, of resorting to a remedy that may give rise to such violent and even fatal results in those uterine affections which do not directly or immediately endanger the patient's life—such as hypertrophy, ulceration, abnormal secretion, and fungoid excrescences of the uterine mucous membrane. "From this consideration," Dr. Noeggerath remarks, "the treatment of violent hemorrhages is naturally excluded, with regard to them we must act after the principle *aux grand maux les grand remèdes.*"

Dr. Noeggerath is not for the entire exclusion of caustics in the treatment of every form of uterine disease; he would merely inculcate a greater degree of caution in respect to them than is observed by some of our recent specialists.

"There seems," he says, "to exist a certain climax in the different remedies themselves; some of them, although very effectual, are comparatively innocuous, while others are almost always followed by violent reaction. Among the former we count the tincture of iodine, and some of the organic acids, as tannin and benzoe, among the latter the solutions of silver and mercury, as well as the stronger mineral acids. The remedy which most happily combines a high degree of innocuity and of efficiency is the tincture of iodine. I have had frequent occasions to inject it into the cavity of the womb, and as yet have never remarked the least untoward symptom from its application. The use of a strong solution of nitrate of silver is almost always followed by a destruction of part or the whole of the mucous membrane, an incident, which no doubt, is at times required, and intended for effectual treatment, and is in many instances unattended with injury to the patient's health. It, indeed, seems that a solution which in one instance is very well borne, does produce the most alarming symptoms in another person. * * We should, therefore, ascertain the irritability of the womb before we attempt to apply one of the stronger caustics to its inner surface. This can be readily done by throwing a quantity of common water into the uterus, this test to be followed by a series of weaker and stronger irritating injections. A few trials of this kind will soon enable us to learn to what degree we are allowed to saturate the solution. Another advantage of these graduated injections is the fact of their diminishing the uterine irritability, thus preparing the womb for the reception of stronger solutions, in case they should be demanded."

The next paper, by the same gentleman, appeared originally in the *New York Journal of Medicine*, for November, 1858. Its subject is *the employment of pessaries.* After a few sensible but very general remarks on the use and abuse of these instruments, the particular circumstances under which their introduction is demanded, and the inadequacy of almost all of those which are in use to meet the prominent indications for the fulfilment of which it is essential they should be competent, Dr. Noeggerath describes and pictures the hysteropher of Dr. Zwank, of Hamburg, with the modifications of it by Dr. Schilling, of Munich, and Dr. Eulenburg, of Coblentz. The action of this instrument is to gently expand the lateral portions, while it sustains the superior wall of the vagina, thus preventing its inversion, and consequently the descent of the uterus. Dr. Noeggerath, although inclined to avoid as much as possible a resort to pessaries, has nevertheless had under his care a number of cases in which the employment of such an instrument was the only measure justifiable; and he believes that the hysteropher alluded to will answer all the requisite purposes of a good pessary more fully and satisfactorily than any other. It has received the sanction also of Drs. C. and A. Mayer, Chiari, Braun, Scanzoni, Breslau, and other German practitioners of note. Its advantages, according to Dr. Noeggerath, are its lightness, its touching only a comparatively small circumference of the vagina,

and scarcely any portion of the womb; thus preventing all uneasy sensations, any irritation or ulceration of the vagina, any incarceration of the uterus, or fluor albus. It can be easily introduced and removed; readily brought to its proper position, and easily cleansed by the patient herself.

The fourth article, also by Dr. Noeggerath, is "a contribution to the *pathogenesis of uterine polypi*." It presents the details of a highly interesting case.

The history of a case of *invagination of the descending colon*, with repeated hemorrhages into the transverse colon, occurring in an infant seven months and a half old, as related by Dr. Jacobi, is a highly interesting one. To understand it correctly, in all its relations, it is requisite to study in detail the symptoms presented during life—the gradual progress to a fatal termination, and the appearances revealed upon a post-mortem examination. The accident in question is of somewhat rare occurrence, especially in young children, and when it does occur its diagnosis is particularly obscure and difficult.

The sixth article, also by Dr. Jacobi, appeared originally in the same journal as the foregoing, for September, 1858. Its subject is the efficacy of the oxysulphuret of antimony as an expectorant in inflammatory diseases of the respiratory organs occurring in infants. In the German Dispensary of the city of New York, the article has been administered, with the best effects, to a large number of patients affected with pneumonia, bronchitis, hooping-cough, etc., of a year old and under, in doses of a grain every two, or even every hour. without vomiting being produced, or only once or twice. The same is true also in reference to patients of two or three years of age, to whom the remedy was given in doses of two grains, four, six or eight times a day.

Dr. Jacobi insists upon the employment of the oxysulphuret of antimony in as large doses, within reasonable limits, as the stomach will tolerate, in order to obtain from it any decidedly beneficial results. The production of vomiting by the first doses taken is by no means an objectionable occurrence—it is to be considered rather favourable than unfavourable. "It has been used, and is used by us," remarks Dr. J., "in inflammations of the larynx, trachea, bronchi, bronchia, and lungs. After the inflammatory fever is removed, and the disease has reached its highest development, it ought to be given alone, or in combination with other agents, in full doses. Not before this stage of the disease can the effects of the remedy be obtained. We have been fortunate enough, generally, to see a speedy recovery follow its administration. We need not add, that it renders the best services in common bronchial catarrh, where full and speedy expectoration is wanted."

The last of the original articles is an elaborate and very able paper by Dr. Jacobi, on *the etiology and prognostic importance of premature closure of the fontanels and sutures of the infantile cranium*.

When we consider the extreme precaution which is observed in the construction and arrangement of the cranial vault, during the early stages of life, in order to secure its gradual ossification and consolidation, so that it may yield and expand with sufficient ease and regularity to permit of the proper and full and regular development of the brain, we would be led, *a priori*, to infer that injurious effects must necessarily result when there takes place a premature arrest of growth of the infant skull, by the too early closure of its fontanels, and the obliteration of its sutures, and we find that such is proved to be the case by the result of numerous cautious observations made by different physicians, in different parts of the world.

As a general rule, liable to few exceptions, it will be found that, in robust, well developed children the large anterior fontanel is closed and the ossification of the skull perfected soon after the age of twelve months, or thereabouts: any considerable deviation from this, especially a much earlier consolidation of the cranium, is always to be viewed as a circumstance of serious import.

After the ossification of the cranial sutures is completed, it will in general, perhaps nearly always, be found that the growth of the flat bones of the skull ceases, and the brain can no longer increase in volume except by forcing asunder the sutures, or by causing absorption of the inner table of the cranium. Not only does the size of the skull depend upon the advancement and seat of

ossification of the sutures—the earlier or later, the partial or total obliteration of certain or all of them—but its symmetrical development, also.

The premature closure of the fontanels and sutures takes place sometimes previously to birth, causing the early death of the infant after delivery, or should it survive, entailing upon it defective mental development, or complete idiocy, with a marked predisposition to convulsive attacks of a more or less severe and dangerous character. In other cases, however, it is during the first few months of extra-uterine life that the entire consolidation of the skull occurs. It is a well established fact, that the perfection of the cerebral functions depends upon the full and equal development of every portion of the brain, and as this must necessarily be prevented by whatever arrests, like the premature closure of the sutures and fontanels, the due and symmetrical growth of the skull, we can easily understand the mischief that must result whenever such premature closure takes place. Thus, we find that, in all cases where there exists any considerable diminution of size and defect of symmetry of the skull, which are almost invariably connected with a too early consolidation of the cranial vault, we are very certain to find an impaired or morbid condition not only of the intellectual faculties, but of the functions, also, of the organs of the special senses, of locomotion and of sensibility. Under the condition referred to, we know that convulsions, deafness, dumbness, mental hebetude, and failure of the sexual instinct are very frequently observed. In other cases, again, abnormal irritability, depraved sensations, epileptic or tetanic seizures, weakness and irregular movements of the muscles of the limbs, are among the prominent morbid phenomena. It is an unquestionable fact, also, that hypertrophy of the brain is occasionally conjoined with the too early obliteration of the fontanels and sutures; in such a case, as we should suppose, the results of impeded cerebral development and of cerebral compression are more promptly and strikingly developed.

While there will always be detected, in cases of too early a consolidation of the cranial vault, some degree of imperfection or other abnormality of the cerebral functions—if no actual disease occur—and while in all such cases the prognosis is highly unfavourable, still it is true that instances do occur, in which, notwithstanding the premature consolidation and consequent arrest of growth of the skull, the infant will nevertheless survive and grow up with, it may be, a feeble and unharmonious development of the mental faculties, and, perhaps, of the special senses, also, but in all other respects will remain apparently in perfect health, until from some accidental cause, an irritation or congestion of the brain or its membranes is induced, by which, sooner or later, the child is destroyed.

"In cases of a slight commencement of cranial ossification," remarks Dr. J., "where the single bones of the cranium are not too firmly attached to each other, febrile attacks may be less injurious, although every one of these, while bringing about congestion, will bring new materials to the completion of the unfortunate osseous hyper-development. Wherever the ossification of the sutures and fontanels is in an advanced stage of development, one single attack of fever, or of any inflammatory disease, even for a day, may produce congestion of the brain and its membranes, in a sufficient degree to cause death by hyperæmia and pressure."

"We desire to remind our readers," Dr. J. observes, in the conclusion of the article, "of the former conclusion, that children whose fontanels and sutures are prematurely ossified, and who manifest symptoms of cerebral irritation or depression, are destined to an early death; and further, from the arguments superadded, we would deduce the following inference—that in all cases of children, whose cranial junctures are prematurely ossified, any acute or febrile disease invading the system, slight though the acute affection may be, offers a most unfavourable prognosis. At all events, we feel justified in drawing the conclusion, that henceforth many cases of infantile diseases which terminate unexpectedly and unfavourably, will be at least explicable to the medical mind, and further, that, to give more exactness to diagnosis, and more certainty to prognosis, the condition of the cranial fontanels and junctures in general will be deemed worthy of the closest attention and examination."

The whole subject, the bare outlines of which we have thus briefly sketched,

is very fully considered by Dr. Jacobi, and its entire literature appealed to, in nearly all its bearings, for facts and observations to sustain the general conclusions at which he has arrived. The article is replete with valuable suggestions, and will yield an amount of gratification and instruction that will amply repay all who may be prompted to study it with care.

The remaining portion of the volume is occupied with the reports on obstetrics and uterine pathology, and infantile pathology, for the year 1858. The first of these reports is divided into twelve sections, which treat respectively of the manuals and reports published during the year named; the anatomy and physiology of the uterus and ovaries; the physiology and pathology of pregnancy, labour, and the puerperal state; the pathology of the ovaries; the pathology and therapeutics of uterine disease, embracing general diagnosis, retarded development, malformations, displacements, uterine and peri-uterine hemorrhages, tumours and structural disease; the pathology of the bladder, vagina, and external genitals; the physiology and pathology of the breasts; the diseases of pregnancy, labour, and child-bed; appendages of fœtus, extra-uterine and multiple pregnancy; remedies; obstetrical operations.

The second report is divided into nine sections, which treat respectively of the manuals that have appeared during the past year, general pathology, dietetics, statistics, etc.; dyscracic and toxæmic diseases; diseases of the organs of digestion, circulation, respiration and of the nervous system; of the skin and sensory organs; of the genito-urinary system; of the motory organs.

These reports present features equal in interest with those of the first or original department of the volume. They embrace a large amount of highly valuable information; much of it derived from sources access to which is denied, by almost uncontrollable circumstances, to a very large portion of the profession. The editors have made their selections from the leading journals and other publications of the day, with great judgment, and have so arranged and classified them as to render their reports a useful and instructive handbook of the recent additions and improvements in scientific and practical medicine, within the departments to which the reports are specially restricted. We trust that they will receive such an amount of approval and support from their professional brethren as will warrant them in continuing to prepare and publish similar reports through the current and succeeding years. D. F. C.

ART. XX.—*Observations on the History, Pathology, and Treatment of Cancerous Diseases.* Part I. *Melanosis.* By OLIVER PEMBERTON, Surgeon to the Birmingham General Hospital. London, 1858. Pp. 38, with four coloured plates.

THIS brief essay purports to be the first of a series on the several forms of cancer, and is limited strictly to the consideration of melanotic cancer. After a survey of the bibliography of the subject, the author states that the most frequent seat of the disease, when it is a primary affection, is in the skin or the eye. "It has been observed also in its first form in the lower jaw, in the testicle, vagina, and rectum, and it is said likewise to have been seen in the liver. The case is not, however, completely authenticated." (Pp. 5.)

As a secondary deposit, "there is hardly any tissue of the body, in which, in some one or other of the previously described forms, melanotic cancer has not been found." (Pp. 7.)

After describing the various appearances presented by the disease in its several situations, as described by the writers on the subject, the author proceeds to give the details of two cases of melanotic cancer observed by himself in the hospital to which he is attached. These two cases were both examples of melanotic cancer of the skin, the primary disease being seated, in Case I., on the back, and in Case II., on the cheek; they are detailed at length from the commencement of the disease to the fatal termination, including the results of the post-mortem examinations. The four plates which accompany the work illustrate these cases.

To the investigator, the whole value of the essay lies in the history of these two cases, as the remaining contents of the work are derived from sources already sufficiently familiar. The young practitioner, however, will take interest in what must be pronounced a carefully compiled survey of the little that is known of this rare form of cancer.

The author presents a resumé of twenty-five published cases, the history of many of which is sufficiently incomplete; from these he is able to present the following slender statistics:—

Of eight primary melanotic cancers of the skin, the average duration of life was somewhat more than three years and ten months. In four, of the eye, the average duration was two years and eight months. Of fourteen primary melanotic cancers of the skin, the average duration of life, *after the operation*, was twenty-seven months. Of eight, of the eye, the average duration was sixteen months.

The microscopic structure of melanotic cancer is disposed of in ten lines, illustrated by a woodcut, copied from Carl Wedl's "Rudiments."

The melanosis of Mr. Pemberton is simply melanotic or pigmental cancer, or, to use his own words (pp. 37), "medullary cancer, with black pigment superadded." But while thus throughout the essay the term melanosis is used synonymously with melanotic cancer, the last paragraph of the work renders it very evident that Mr. Pemberton is acquainted with another melanosis, which is *not cancerous*. For he says (pp. 37): "The description that I have previously given of melanosis will be quite sufficient to distinguish it from every other disease, with the exception of non-malignant melanosis of the skin."

It is quite evident, then, that there exists for Mr. Pemberton a "non-malignant melanosis of the skin." Nay, he has evidently made its near acquaintance, for he describes its characteristics. "Non-malignant cutaneous melanosis generally arises in many spots, and these of large size, at the same time. They are, moreover, of a deep black colour; and they never give rise to cachectic symptoms." (Pp. 38.)

But it appears to us that the existence of a *non-malignant* melanosis, whether of the skin, or of any other organ, at once prevents the possibility of using the terms "melanosis" and "melanotic cancer" synonymously. And in view of the fact that brownish or blackish pigmental deposits may occur in almost *any* normal texture, and in almost any new formations it would seem better to banish the term melanosis, and speak of cancer with pigment deposit, of nævi with pigment deposit, &c. &c., instead of applying a single generic term which may lead to constant misconception. J. J. W.

ART. XXI.—*Disorders of the Blood.* By JULIUS VOGEL, M. D., Professor of Clinical Medicine in the University of Giessen. Translated and edited by CHUNDER COOMAR DEY, Graduate of the Medical College of Bengal. Calcutta, 1856. 8vo. pp. 219.

THIS work is an excellent translation of the *Störungen der Blutmischung*, constituting the 4th section of Virchow's *Handbuch der Speciellen Pathologie und Therapie*. Published several years ago, it has become so well known to the profession that no particular account of it is needed in this place. It is sufficient, therefore, to observe that the work is justly regarded as a lucid, methodical, and accurate exposition of all that is positively known and well established concerning the various alterations in the quantity, quality, and property of the normal blood-constituents, the abnormal accumulation of noxious matters in the blood, and the putrefactive changes which this fluid undergoes in certain diseased conditions of the economy. Rich in well established facts whose practical application to clinical medicine has been frequently and satisfactorily tested, and at the same time remarkably free from all dubious and uncertain details, it constitutes, in fact, a practical, "important, and useful monograph on the subject of blood diseases," and, as such, fully sustains the distinguished reputation and high position of the author.

In its present dress, as a translation from the German into the English, by one whose native tongue is so different from either of these, the work is curiously interesting in a philological point of view. A few years ago, Dr. Mouat, of the Bengal Medical College, translated the "London Pharmacopœia" into the Persian language. He also compiled from the well-known works of Bourgery, Meckel, Sharpey and Quain, Cruveilhier, Ellis, Harrison, and others, an excellent treatise on the "Elements of Anatomy," which he published in the vernacular speech common to both Hindoos and Mohammedans. This treatise was accompanied by an "Atlas of Anatomical Plates," with descriptive letter-press in both English and Hindostanee. Less than ten years ago, Mohammed Alee-el-Baglee, professor of surgery in the Medical School of Cairo, published an elementary surgical work entitled "Me Ghorar el Nagah fi a'Amal el Garrah," or "The Book of Success in Surgical Operations." This is regarded, we believe, as the first work written in Arabic since the decline of oriental learning, after the fall of the Caliphate. Its author was educated in the medical schools of Paris; and his work, therefore, as well as those of Mouat and some others that might be mentioned, such as the translation of Hooper's "Vade Mecum" into Arabic, are remarkable as contributions of learning offered by the West to the East, in return for that knowledge which the former, in ancient times, received so freely from India and Egypt. Chunder Coomar Dey's translation of "Vogel" is still more remarkable, since it exhibits to us the singular spectacle of the Orient placing into the hands of a distant people of the Occident, and their still more distant descendants in the New World, valuable information calculated to alleviate the sufferings of man, but hitherto locked up, to a certain extent, in the difficult tongue of another European people. J. A. M.

ART. XXII.—*A Practical Treatise on Enteric Fever; its Diagnosis and Treatment: Being an Analysis of one hundred and thirty consecutive Cases, derived from Private Practice, and embracing a Partial History of the Disease in Virginia.* By JAMES E. REEVES, M.D. 8vo. pp. 199. J. B. Lippincott & Co.: Philadelphia, 1859.

EVERY new series of observations, in relation to the pathology, diagnosis, and treatment of almost any disease—if sufficiently extended, and, at the same time, carefully made and accurately recorded—is of value. It increases our acquaintance with the varying phases which the malady presents in different patients, in different localities, at different seasons, and in different years. But if thus valuable in respect to well-known diseases, every new series of observations, made in good faith by judicious practitioners, in the same or different localities, becomes doubly so when the question is of an affection like typhoid or enteric fever; of which the true pathological character and relations are still far from being established beyond the possibility of a very reasonable doubt—an affection which, at the same time, is of especial interest to the medical practitioner from its constantly increasing prevalence throughout the United States; and from the fact that in many localities it is taking the place, as it were, of their former endemic diseases—the so-called miasmatic fevers, especially those of a remittent type.

It is such a series of observations in reference to the diagnosis and treatment of enteric fever that Dr. Reeves presents in the work before us. These observations are based upon the analysis of one hundred and thirty cases occurring in private practice, and originally published in the *Buffalo Medical Journal*. To give to the volume more the form of a systematic treatise, the author has not hesitated to borrow largely from contemporary authorities, while he has endeavoured to furnish, from the reports of physicians residing in different portions of the State, an outline of the history of enteric fever in Virginia.

The materials at the command of Dr. R. for the accomplishment of the work he has undertaken, appear to have been respectable as well in regard to quantity as to quality. We are not so well persuaded, however, that of those materials he has always made the very best use. It is very certain that, in many instances,

they have been very unartistically arranged, while, on more than one occasion, the conclusions drawn from the facts he has adduced, do not strike us as bearing that close logical relation to his premises, which is of so much importance in the discussion of all medical questions. His facts, from want of a proper collocation and comparison, do not always tell their own story, and are occasionally of no value, excepting so far as they are found to conform to the truths carefully developed and weighed by preceding observers.

The long string of loose statements brought forward by Dr. R. in proof of the contagious character of enteric fever, do not certainly bear him out in his very positive conclusion on this important point in the etiology of the disease. The statements that have any relation to this point, as given by Dr. R., are too loosely worded, and exhibit too evidently the careless manner in which they have been made, to entitle them to any weight.

Dr. Reeves does not appear to have made any post-mortem examinations with the view of determining the anatomical lesions that are most generally present in the different organs and tissues in fatal cases of enteric fever. The chapter which treats of the pathological anatomy of the disease, is copied entire from Dr. Wood's work on the practice of medicine.

The views of Dr. R. in regard to the actual nature of the fever he describes are purely hypothetical, and expressed in terms so vague and confused as to convey to the reader no very clear idea of even the author's meaning. He supposes "enteric fever to be the result of a specific poison, by some means introduced into the blood; that in the attempt to eliminate this poison from the blood-current, the glands of the bowels, whose office is assigned to be that of eliminating any putrescent accumulations from this fluid (?), become overburdened, and thenceforth result in more or less change of structure; that by such a change the channels also, through which the nutriment reaches the blood, are more or less obstructed; that in consequence of this the blood becomes additionally depraved; and that these causes, primary and secondary, acting together, are capable of giving rise to the several conditions characteristic of enteric fever."

So far as relates to the general analysis of the symptomatology of enteric fever in its several grades—from the mildest to the most malignant—the history it presents of the usual course, complications, terminations, and sequelæ of the disease, the general sketch of its etiology, and we may add, also, of its most appropriate treatment, the work of Dr. Reeves may be consulted with much confidence and profit. It does not, it is true, throw any new light on the nature and causes of enteric fever—it confirms, however, the observations of preceding practitioners in respect to many important points connected with the diagnosis, general progress, results, and treatment of the disease. D. F. C.

ART. XXIII.—*A System of Surgery; Pathological, Diagnostic, Therapeutic, and Operative.* By SAMUEL D. GROSS, M. D., Prof. Surg. in Jefferson Med. Coll., &c. &c. &c. Illustrated by 936 engravings. In two volumes. Philadelphia: Blanchard & Lea, 1859. 8vo., pp. 1162 and 1198.

THE object of this work is to furnish a systematic and comprehensive treatise on the science and practice of surgery, and the aim of the author has been to embrace in it the whole domain of surgery. So short a time has elapsed since the appearance of these two large volumes, that we have not been able to examine them carefully enough to form any judgment of the manner in which the author has accomplished his object; but an examination of the table of contents has satisfied us that the work is unusually comprehensive, embracing many subjects not usually treated of in systematic surgical works, while the reputation and experience of the author justify us in expecting that his present publication will prove a valuable addition to our surgical literature.

In our next we hope to present a full review of these elegantly printed and copiously illustrated volumes, and in the meantime we take pleasure in inviting to them the attention of the profession.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *The Structure of the Ultimate Air-tubes, and the Distribution of the Bloodvessels, of the Human Lung.*—A paper on this subject has been communicated to the Royal Society of London (May 26th, 1859) by A. T. H. Waters, Esqr., of Liverpool. The bronchial tubes terminate in a dilatation, into which open a number of cavities, to which various names have been given, but which the author proposes to call air-sacs. The air-sacs connected with a terminal bronchial twig, with their vessels, etc., constitute a lobulette. The lobulette consists of from six to twelve air-sacs; the latter are somewhat elongated cavities, lying side by side in the lobulette, and separated from each other by thin walls; in shape they are polygonal from mutual pressure of their parietes. They all communicate with the dilated extremity of the bronchial tube, which forms the common mouth or centre of all the sacs; they have no lateral orifices of communication with each other; they often divide or give off other sacs; the air-sacs of one lobulette do not communicate with those of another. The walls of the air-sacs are covered by a number of small, shallow, cup-like depressions, separated from each other by partial septa. These depressions, or alveoli, are very numerous; their number varies, in different air-sacs, from eight to twenty. The lobulettes are supported externally by the pleura, but within the lung, in part by the bronchial tubes and bloodvessels. The membrane forming the walls of the air-sacs in a lung inflated and dried is very transparent; it constitutes, by its projection towards the centre of the sacs, the septa of the alveoli. Each lobulette is distinct and separate from those which surround it. The separation may be sometimes seen in the inflated infants' lung, but the observation of the fœtal lung affords the best proof of it. The author alluded to investigations he had made on the lungs of fœtuses which confirmed the view he had taken of the arrangement of the ultimate pulmonary tissue, and of the separation between the lobulettes. The air-sacs are fully formed before birth, and each lobulette is seen as a little red body attached to an air-tube. By a partial or complete inflation of the fœtal lung, the arrangement of the air-sacs may be distinctly made out. The bronchial tubes at their termination have a special character. A number of alveoli, like those of the air-sacs, is found in their walls. They are best seen in the lungs of some of the lower animals, as the cat. The author has found them in the infant in the last divisions of the bronchial tubes and their dilated extremity; in the adult, only in the dilated extremity. They seem to become obliterated with advancing age. Their existence was first pointed out by Rossignol. The bloodvessels of the lungs: the pulmonary plexus is situated in the walls of the air-sacs; when formed, it maintains a tolerably uniform diameter throughout; the spaces between the vessels, in an injected and inflated preparation, are somewhat larger than the vessels themselves. The branches of

the pulmonary artery do not anastomose until they reach the termination of the bronchial tubes; they anastomose freely in the air-sacs. The author believes that the vessels of one lobulette do not anastomose with those of another; that, consequently, in the adjoining walls of two lobulettes two layers of capillaries lie side by side, and therefore in such situations the blood is not fully exposed to the air on both sides. The radicles of the pulmonary veins issue from the periphery of the lobulettes, and, forming larger vessels, run in the interlobular spaces to the root of the lung. After briefly alluding to the general opinion of the distribution, etc., of the bronchial vessels, the author described the results of his own injections. Injection of the pulmonary artery, so as to fill the plexus, but not the veins, does not inject the vessels of the bronchial tubes; but if the veins are filled, the bronchial tubes become partially injected. Injection of the pulmonary veins, whether the plexus be well filled or not, always injects the bronchial tubes. Injection of a bronchial artery, when fairly within the lung, produces injection of the bronchial tubes, and the fluid returns by the pulmonary veins. It is difficult, in man, to fill the vessels of the extreme bronchial tubes through the bronchial artery. The bronchial veins: the author has never been able to find the so-called deep bronchial veins as venæ-comites of the arteries. The only veins he has found, have been one or two small ones, usually one, at the root of each lung, which, on being injected, were found to terminate in the structures about the root of the lung, and not to accompany the arteries within the lung. From careful injection and repeated examination of a large number of specimens, both of man and the lower animals, the author draws the following conclusions of the distribution and termination of the bronchial vessels. The bronchial arteries are distributed to the bronchi, bronchial glands, bronchial tubes, etc.—both their mucous membrane and deeper parts—the bloodvessels and areolar tissue of the lungs; and they terminate, 1st, those about the root of the lung, in the bronchial veins; 2d, those within the lung, in the pulmonary veins. The bronchial arteries do not establish any communication with the pulmonary arteries. The author concluded by alluding to the views of previous observers.—*Med. Times and Gaz.*, July 16th, 1859.

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2. *Doctrine of Absorption.*—KÖHLER endeavours to show the difference in the rapidity of absorption between starving and fed animals. The animals experimented upon were rabbits, dogs, and pigeons; the substances used, strychnia, hydrocyanic acid, and ether; the channels of introduction, the digestive tube, the peritoneal cavity, the respiratory organs, and the subcutaneous cellular tissue of the back. The inference arrived at is, *that starving diminishes absorption and retards the symptoms of poisoning and death.* This result is contradictory to the views of many physiologists, but is analogous to that obtained by Kaupp in his experiments on the action of loss of blood on the phenomena of poisoning by strychnia. Köhler's experiments exhibit, it must be stated, frequent exceptions to the law he endeavours to establish, but in part these exceptions appear to depend on concomitant circumstances.—*Brit. and For. Med.-Chir. Rev.*, July, 1859, from *Virchow's Archiv.*, vol. xiv., 1859.

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3. *The Mode in which Sonorous Undulations are conducted from the Membrana Tympani to the Labyrinth in the Human Ear.*—JOSEPH TOYNBEE, Esq., read (May 26) a paper on this subject to the Royal Society.

The opinion usually entertained by physiologists is, that two channels are requisite for the transmission of sonorous undulations to the labyrinth from the membrana tympani, viz., the air in the tympanitic cavity which transmits these undulations to the membrane of the fenestra rotunda and the cachela; and, secondly, the chain of ossicles which conducts them to the vestibule. This opinion is, however, far from being universally received. Thus one writer on the physiology of hearing contends that "the integrity of one fenestra may suffice for the exercise of hearing;"[1] another expresses his conviction that "the transmission of sound cannot take place through the ossicula;"[2] while Sir John Her-

[1] Mr. Wharton Jones, Cyclopædia of Surgery, art. Diseases of the Ear, p. 23.
[2] Mr. Brooke, Lancet, 1843, p. 380.

schell, in speaking of the ossicles, says, "They are so far from being essential to hearing, that when the tympanum is destroyed, and the chain, in consequence, hangs loose, deafness does not follow."[1] The object of this paper is to decide, by experiment, how far the ossicles are requisite for the performance of the function of hearing. The subject is considered under two heads, viz: 1. Whether sonorous undulations from the external meatus can reach the labyrinth without the aid of the ossicles as a medium. 2. Whether any peculiarity in the conformation of the chain of ossicles precludes the passage of sonorous undulations through it.

1. *Can sonorous undulations reach the labyrinth from the external meatus without the aid of the ossicles as a medium?* This question has often been answered in the affirmative, apparently because it has been ascertained that in cases where two bones of the chain have been removed by disease, the hearing power is but slightly diminished. In opposition to this view, it must, however, be remembered that the absence of the stapes is always followed by total deafness, while a fixed condition of this bone (anchylosis) is accompanied by very serious deafness. The following experiments, selected from several others, demonstrating the great facility with which sonorous undulations pass from the air to a solid body, indicate that the stapes, even when isolated from the other bones of the chain, may still be a medium for the transmission of sounds to the fenestra ovalis and the vestibule.

Experiment 1. Both ears having been closed, a piece of wood, five inches long and half an inch in diameter, was held between the teeth, and a vibrating tuning-fork C having been brought within the eighth of an inch of its free extremity, its sound was distinctly heard, and it continued to be heard for between five and six seconds.

Experiment 2. Three portions of wood, of the same length and thickness as that used in the previous experiment, were glued together so as to form a triangle somewhat of the shape of the stapes; the base of this triangle being placed against the outer surface of the tragus, the tuning-fork C, vibrating within a quarter of an inch from its apex, was heard for twelve seconds.

2. *Is there any peculiarity in the construction of the chains of ossicles to prevent the passage of sonorous vibrations through it?* This question has also been answered in the affirmative, on account of the various planes existing in this chain, and of the joints between the several bones composing it. The following experiments, selected from a variety detailed in the paper, indicate that neither the variety of the planes existing in the chain, nor the presence of its joints, prevents the passage of sonorous undulations through it.

Experiment 1. Two pieces of wood, each five inches long, were glued together so as to represent the planes of the malleus and the incus, a triangular piece being glued to one surface of the inferior extremity of the portion representing the incus so as to imitate the plane of the stapes. Three pieces of wood, each five inches long, were glued end to end so as to form a straight rod. The vibrating tuning-fork C, being placed at one extremity of the apparatus representing the chain of bones, and the other end being placed between the teeth, the sound was heard most distinctly for several seconds, and when it ceased to be heard the straight rod was substituted, and the sound was again heard, but only for three seconds.

Experiment 2. Between each of the three pieces of wood, representing the chain of bones, similar to those used in the previous experiment, were placed, instead of glue, two layers of India-rubber about as thick as ordinary brown paper; these pieces being held tightly together, the tuning-fork, applied at one extremity of the chain, was heard as distinctly and as long as in the previous experiment.

The experiments, dissections, and observations recorded in this paper induce the author to arrive at the following conclusions: 1. That the commonly received opinion that sonorous undulations pass to the vestibule through the chain of ossicles is correct. 2. That the stapes, even when disconnected from the viscus, can still conduct sonorous undulations to the vestibule from the air. 3. So far

[1] Encyclopædia Metropolitana, art. Sound, p. 810.

as our present experience extends, it appears that in the human ear sound cannot reach the labyrinth from the membrana tympani without the agency of two media, viz., the air in the tympanic cavity, and the chain of ossicles.—*Med. Times and Gaz.*, June 18, 1859.

4. *Identity of the Meconium and Vernix Caseosa.* By Prof. FORSTER.—The general opinion respecting the meconium is, that it consists in a mixture of bile, intestinal mucus and intestinal epithelium; but microscopical examination shows that besides the colouring matter of the bile it is composed chiefly of the vernix caseosa. For the most part it consists of small flat scales, which present all the characteristics of horny epithelial plates completely corresponding to the horny scales of the vernix. Under the microscope, the meconium only differs from the vernix by the presence of the yellow colouring matter and the smaller number of fat-globules. A proof of the identity is its containing minute hairs in just the same numbers as the vernix, which, indeed, without the microscope, may be separated from it by a needle. The horny scales could have no other source than the vernix, for the stomach and intestinal canal are lined with cylinder epithelium, and the mucous membrane of the mouth and œsophagus does not give rise to them. Besides these scales, we observe in the meconium fatty globules of different sizes, crystals of cholesterine, and irregular yellow and brownish clodlets, which give the dark colour to the meconium, and are doubtless biliary colouring matter. The fatty globules are evidently of cutaneous sebaceous matter, and the cholesterine is in part derived from the bile, and in part from the decomposition of the vernix during its passage to and deposit in the rectum.

The fœtus swallows from time to time some of the liquor amnii having the vernix swimming in it, and the hairs and horny scales pass unchanged along the intestinal tract. Whether any of the sebaceous matter is taken up by the lacteals may perhaps be determined by microscopical examination of the intestinal villi of the fœtus; and it would be interesting to determine, by numerous examinations of the intestinal canal, at what period this swallowing of the liquor amnii commences. As the elements of the vernix are only suspended in the liquor in small quantities, a large quantity of this must be gradually swallowed to lead to the amount of meconium usually present. The water must be soon absorbed from the stomach, as it is never found in it. The greater portion is probably excreted by the kidneys, and again reaches the amnios. That it in nowise contributes material to the nourishment of the fœtus has been shown by Bischoff; but that does not prevent it serving some purpose in the economy. A regular examination of the entire contents of the intestinal canal in numerous fœtuses of different ages, is required to elucidate these points; and especially would such examination be of interest in the case of monsters. That the acephalæ have no meconium has long been known, and has usually been attributed to the absence of the liver. This would, however, only explain the absence of its dark colour; and the meconium will only be wanting when, by reason of the malformation of the intestinal canal, the reception and transport of the liquor amnii holding the vernix caseosa are prevented.—*Med. Times and Gaz.*, June 11, 1859, from *Wien Wochenschrift*, 1858, No. 32.

MATERIA MEDICA AND PHARMACY.

5. *On the Administration of Belladonna, and on certain Causes which modify its Action.*—A paper on this subject was read before the Royal Med. and Chirurg. Society (July 5) by HENRY W. FULLER, M. D. The author was led to the inquiries which form the subject of this paper by observing the remarkable tolerance of belladonna exhibited by a child, a patient in St. George's Hospital, to whom he was administering it as a remedy for chorea. Fancying that the tolerance of the drug observed in the case in question might be attributable

either to imperfection of the extract or to the modifying influence of the choreic spasms, he obtained other extracts of belladonna from Apothecaries' Hall, from Squire's, and from Jacob Bell's, in Oxford Street, and administered it, dissolved in water, to ten other choreic patients in the hospital. In a twelfth case, he administered atropine, obtained from Morson's, in Southampton Row. The result was in all cases the same—namely, extraordinary tolerance of the remedy, with a varying, but not very satisfactory, effect as regards the subjugation of the choreic spasm—the tolerance of the drug being so great that one girl, aged ten, took seventy grains of the extract of belladonna daily, and a total amount of one thousand and nineteen grains, or rather more than two ounces, in twenty-six days; whilst the child, aged fourteen, to whom the atropine was administered, took no less than thirty-seven grains in eighteen days. 1. The patients were all pale whilst taking the larger doses of the drug; and, in no instance, was there any feverish heat, or any rash or erythematous blush on the skin. 2. There was great weakness of the pulse in all the cases, and, in some, considerable quickness. 3. The urine was generally clear and acid, but scanty, and of high specific gravity, varying from 1024 to 1036. In three cases it frequently contained a copious deposit of crystallized lithic acid; and, in three other cases, it was usually loaded with lithates. In one case, for the space of a few hours, whilst the patient was under the toxical influence of a drug, it became ammoniacal almost as soon as voided. 4. In one case some difficulty was experienced in voiding the urine; but this was not observed in any other case. This difficulty passed off when the belladonna was omitted. 5. The tongue was always moist, but unusually red whilst the larger doses of belladonna were being taken, and the redness passed off when the drug was omitted. 6. The remedy did not, in any instance, exert a constipating effect; on the contrary, it appeared to prove aperient. An occasional purge was required only in three cases. 7. In five cases it ultimately gave rise to sickness and diarrhœa; but in every instance, save one, the choreic spasms had almost wholly ceased, and, in the exceptional case alluded to, had greatly subsided before those symptoms were produced. Whenever bowel symptoms occurred, mere omission of the medicine sufficed to cause their cessation. Did the existence of spasm counteract the influence of the drug and prevent their occurrence? 8. Dilatation of the pupils was very uncertain. In almost every instance the pupils were large before the administration of the medicine was commenced, and they invariably became dilated soon after a dose of the medicine was taken. The dilatation, however, was not to the degree observed when a solution of belladonna is dropped into the eye, and, in most of the cases, it passed off before another dose of the medicine was due. Its ordinary duration was about two hours and a half. In one case, excessive dilatation occurred for a few hours coincidently with the occurrence of sickness and purging. In two cases considerable dilatation was pretty constant; in one case it was seldom great. 9. In two instances only did the slightest indistinctness of vision occur. In one of these it was observed only on three occasions, and then only to a slight degree, and was not accompanied by dryness of the throat, headache, or any impairment of the mental faculties; in the other, it took place more frequently, and, strange to say, was most complained of when the pupils were of their natural size, and were contracting freely under the stimulus of light. It was not attended by delirium, nor by any indication of the action of belladonna, and the administration of an additional quantity of the drug was almost invariably followed by its removal. 10. The drug did not, in any case, produce the slightest narcotic effect; and, in one case it failed utterly as an anodyne. 11. In no instance was there any evidence of its accumulation in the system. 12. The tolerance of the drug was not in proportion to the severity of the choreic spasms. In Case 2, in which fourteen grains of the extract, daily, occasioned sickness and purging, the spasms were more severe than in Case 11, in which seventy grains were taken daily without disturbance of the stomach and bowels. 13. The curative effect of the drug was very uncertain. In seven cases its action appeared to be decidedly curative, but in two cases it failed to exercise the slightest control over the spasms; and in the other three cases, it is doubtful whether the improvement ought to be attributed to its action. Being desirous of ascertaining whether the tolerance of the drug was due to its decom

position in the stomach, or to its non-absorption, the author submitted to Dr. Marcet and Mr. Kesteven for examination some of the urine voided by a patient in Roseberry Ward, who at the time was taking sixty-four grains of the extract of belladonna daily. The former extracted atropine enough from three ounces of the urine to kill two white mice, and narcotize several others. The latter, from two ounces of the urine, obtained sufficient to produce dilatation of a cat's eye, to afford the beautiful filamentous crystals of atropine now laid before the Society, and to give the reactions which atropine yields with iodine water, tannic acid, chloride of gold and sulphuric acid, and bichromate of potash. The feces also, on being analyzed by Dr. Marcet, yielded abundance of atropine. Thus, then, up to this point, five facts appeared proved: 1st. That in cases of chorea extraordinarily large doses of belladonna and atropine are tolerated. 2d. That the drug is absorbed into the blood, and, therefore, that the tolerance of it is not attributable to its non-absorption, nor to its being decomposed in the stomach. 3d. That it does not accumulate in the blood, but passes out of the system with the urine and feces, and probably with the other excretions. 4th. That it does not exercise that amount of control over the choreic spasms which would have been expected from the readiness with which it is tolerated by the system. 5th. That the tolerance of the remedy is not in proportion to the severity of the choreic symptoms. The question, therefore, arose as to whether the existence of chorea had any part in producing tolerance of the drug, or whether that tolerance may not have been due to some other circumstances? With the view of determining this point, the author administered the extract of belladonna to two convalescent children, whom he kept in the hospital for the purpose. To the one, aged seven, he ultimately gave thirteen grains of the extract daily, and to the other, aged ten, twenty-eight grains daily, without producing dryness of the tongue or fauces, or any symptom indicative of the action of belladonna beyond some temporary dilatation of the pupils. With the view of having the matter tested with children on a larger scale than is possible at St. George's Hospital, the author requested a friend, who is attached to a large public institution for children, to administer it cautiously in gradually increasing doses. Accordingly, to eleven children, varying in age from three to six, one-eighth of a grain of the extract in solution was administered three times a day, and the dose was increased in the course of six days to half a grain thrice daily. To four other children, from eight to twelve years of age, a quarter of a grain of the extract was given, and the dose was increased in the course of six days up to one grain three times daily. These children were all in good health; the dose was gradually increased, and dilatation of the pupil was the only effect produced. To seven other children, between five and seven years of age, he began by giving one-third of a grain twice a day, and continued it for three days without perceiving any effect from its administration beyond slight dilatation of the pupil. He then prescribed two-thirds of a grain twice a day; but by mistake one grain and a third was given at a dose. The result of this large and sudden increase was that the children were all seized with sickness and vomiting; some of them had diarrhœa, and one of them had the violent uncontrollable delirium characteristic of belladonna. Stimulants were at once administered, the belladonna was omitted, and on the following day the toxical effects of the drug had passed off, and the children were perfectly well. To adults, the author administered the drug in pills, and in solution, and he found that, however given, very small doses usually produce dryness of the tongue and fauces; that two grains daily will often excite vertigo and dizziness, and that it is not possible to establish a tolerance of the larger doses as in children. He was thus led to the conclusion that: 1st. The tolerance of belladonna is not attributable to the counteracting influence of choreic spasms, but is in some way connected with the age of the patient. 2dly. That a much larger dose than is usually prescribed is well borne from the first by children of tender years. 3dly. That in children, though not so in adults, a tolerance of the remedy is speedily established, so that the dose may be safely increased, rapidly, but gradually. 4thly. That special care should be taken in apportioning the dose to the age of the patient, and in not increasing the dose too rapidly, inasmuch as the usual toxical effects of the drug will be produced if too large a dose be given before a sufficient tolerance of the drug

has been established. 5thly. That the milder toxical effects produced by the drug are of little importance, and subside without remedies as soon as the administration of the medicine is discontinued. 6thly. That adults cannot tolerate the doses of the drug which can be taken with impunity by children. The extraordinary difference in the tolerance of the drug observed at different periods of life, the author remarks, may be explicable by the medicine passing off with the urine, as also, probably, with the other excretions, more rapidly in childhood than in adult life; and he concludes his paper by the following suggestions: 1st. That inasmuch as belladonna is admitted to be productive of signal benefit in hooping-cough, even in the minute doses in which it has been hitherto administered, it is probable that a corresponding increase of benefit would result from the larger doses, which it is now proved may be safely prescribed under certain restrictions. 2dly. That it deserves a trial in epilepsy, laryngismus stridulus, and other spasmodic affections. 3dly. That combining as it does antispasmodic, sedative, and slightly purgative properties, it may be productive of relief in certain cases of dyspepsia connected with infra-mammary pain, flatus, and spasms in the abdomen. 4thly. That inasmuch as it exercises a remarkable power in controlling spermatorrhœa and incontinence of urine, and the experiments recorded in this paper prove that it is excreted with the urine, it is highly probable that its curative action in such cases may be due in great measure to its topical effect, and if so, that it might be applied locally with advantage.—*Med. Times and Gaz.*, July 23, 1859.

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6. *On the External Use of Medicines.*—Mr. J. B. Thomson, in a recent paper (*Edinb. Med. Journ.*, July, 1859), states that his attention has been drawn to this subject by an article in the *Bull. Gén. de Thérap.* by M. Deschamps. Mr. T. gives the following as the results of his professional observation and personal experience for several years:—

1. *Of oily and greasy applications externally.*—M. Deschamps alleges that these do not possess any great therapeutical efficacy. I have been long convinced of the contrary, and the proof seems to my mind satisfactory. During seventeen years' observation, in a district where the population is much employed in woollen manufacture, I came to the following conclusions, viz: that puny and weakly children, in a few weeks after entering the woollen mills, exhibit a marked improvement in physical appearance; that the oils (chiefly olive) among which they work pass into the system by the skin in considerable quantity, relieving scrofulous complaints, and improving the general condition of the operatives. Further, this opinion is established by a comparison of the increased weights of those working in the more oily departments—by the comparative weights of those young persons employed in the cotton and those in the woollen factories—by a comparison of those in the woollen factories and those without in the same locality—and by the declension in weight when individuals are taken from the more oily to the less oily occupations of the factory.

Applied as medicaments, we have the testimony of various practitioners of note to the efficacy of oil-inunction, and especially of Professor Simpson, who has written a valuable pamphlet on the subject. M. Deschamps tells us that he composed a soap with iodide of potassium, and after rubbing it four times upon his epigastrium, and analyzing the urine in the intervals of the frictions, he found it to contain appreciable quantities of iodine. Let him try the experiment with ʒij of the iodid. potass. to ℈j of lard, and he will find the same result; or let him rub into the epigastrium ʒj of tr. opii and ʒij of olive oil, and within half an hour it will very likely set him quietly asleep. At least such is the usual result of my personal and professional experience. I think it is generally admitted that the most remarkable effects of the external applications of mercury and iodine are in the form of unguents.

2. *Of medicines of an anodyne nature applied externally by means of plasters.*—I beg to add the following from my note-book:—

M. S. had a belladonna plaster applied to the forehead for neuralgia. Within six hours from the application she was delirious, with pupils much dilated. The plaster was removed, and the delirium and dilatation went off. The experiment was repeated with the same result.

A. L. had a belladonna plaster applied to the pit of the stomach, and soon after became surprised at the incoherency of her ideas, and wandering state of her mind. The pupils were dilated also. The plaster was removed, and the symptoms went off. I repeated the application, and the same results followed. In at least six other cases I have seen the same effects.

Opium plasters, applied to the stomach, I have in several instances found also to produce narcotic effects.

In two of the cases, where the belladonna plasters were applied to the lumbar region, the symptoms were more slightly observable; and my experience of the external application of medicines leads me to the belief that these are *most effectual* when applied to the *epigastric region*.

3. Of medicines externally applied, *tinctures* have been found in my hands most rapidly absorbed. Take the following examples:—

M. N. had occasional attacks of delirium tremens, under which she became excited and sleepless. When she first applied to me I gave her forty drops of the liquor morphiæ, repeated within three hours, without any effect, during two successive nights. The third night, thirty drops of the tr. opii were rubbed upon the epigastrium, after which a quiet night ensued. This patient came frequently under my care for the same complaint, and I always found the infriction of half a teaspoonful of tr. opii induce sleep. Taught by this case, I have not for many years given opium internally (but have been generally successful with the above treatment) in such cases.

W. R., subject to periodic attacks of insanity, attended with sleeplessness. I seldom could bring on complete sopor, but a subsidence of his violence generally followed the rubbing on the epigastrium of a teaspoonful of tr. opii.

In cases of intestinal spasm, where laudanum and ether given inwardly failed, I have often seen relief speedily ensue from laying over the abdomen hot cloths sprinkled with a teaspoonful of tr. opii or tr. hyoscyami.

In order to be thoroughly satisfied of the *post hoc* and *propter hoc* in my practice of endermic medication, I have experimented largely upon my own person with narcotics.

After infriction of the epigastrium with half a teaspoonful of laudanum (which I have tried fifty or sixty times) I have experienced as follows: The pulse rises—the ideas increase in activity—incoherence and confusion ensue—a sense of fulness in the head—perspiration—and in from twenty to twenty-five minutes after the application sleep unconsciously takes place.

With chloric ether and sulph. ether very similar effects follow: The pulse rises and becomes full—perspiration succeeds—then incoherency of ideas and sleep. In some instances, with chloroform, chloric ether, sulphuric ether, laudanum, and tr. hyoscyami, if complete sleep does not occur, there is excitement and dreaming, and for at least twelve hours a sense of drowsiness.

I have experimented on the different effects of these substances on different parts of the body: If applied to the frontal or occipital region the same takes place—rubbed into the hands and feet, rather more is required, say a teaspoonful of the above named narcotics; but I find that the epigastrium more rapidly and successfully absorbs all these substances.

I have observed that the conditions of the system, especially the state of the stomach, deserve to be attended to particularly. If the endermic medication is made when the stomach is disordered, or while in a state of repletion and actively engaged in the process of digestion, the disturbance of the system is greater, and dreams and confused imperfect sleep are the result.

In smaller doses than I have mentioned, the narcotic, when repeated every three or four hours, slowly but surely produces soporific effects.

The practical lessons I learn, from ample trials made upon my patients and upon myself for many years, are as follows:—

1. That endermic medication is entitled to much greater attention by the general practitioner than it has received. The endermic, or, as it was at one time called, the iatraleptic, method of medication seems to me to have been almost altogether ignored by the profession. I find almost entire scepticism on the subject prevail as to the possibility of introducing agents through the unbroken skin of the human body. When a student, I was indoctrinated into the belief,

from the professorial chair, that the epidermis must be first removed by a blister, and the denuded part powdered with the medicament, before cutaneous absorption took place; and even then it was trifling, and only strong poisons could be so absorbed into the system efficaciously. I hold very different views indeed; nor am I without the concurrent testimony of a few medical authorities.

Several physiologists agree in having proved that water, at 82° of Fahrenheit, is taken into the body, giving increased weight. Several alkaline substances, rhubarb, and colouring matters, dissolved in baths, have been detected in the urine of those subjected to baths holding these substances in solution. Vaccine vesicles have been procured without puncture, *by keeping lymph in contact with the unbroken skin*, and excluding it from the air by a coating of blood. Vegetables and some small animals, steeped in laudanum, are paralyzed. An aqueous solution of opium produces this effect on the barberry and the sensitive plants; on the frog and mouse. Dr. Christison admits that opium has been known to act through every channel by which it can pass into the system, by the unbroken as well as the broken surface; and I doubt not, in these days of refined and ingenious systems of poisoning, may be used as poison. A case is narrated where an opium poultice to the blistered scrotum produced profound sopor, and the cause was happily discovered in time to save life. A child of two months old nearly perished from a cerate, containing fifteen drops of laudanum, kept twenty-four hours upon a slight excoriation; insensibility and convulsions having supervened therefrom. A soldier having erysipelas was ordered a linseed meal poultice with fifteen drops of laudanum sprinkled on it, and next morning deep sleep, convulsions, twitching, and death followed. The attendant had thoughtlessly poured on and soaked the poultice with laudanum to the extent of ℥j. Added to these facts, we have the certain results of mercury, iodine, etc., to prove that endermic medication deserves a higher consideration in medical practice than it has yet received from the profession.

Another lesson from these facts is—

2. That the evil effects of opiates introduced by the mouth may be, and ought to be, avoided by the adoption of endermic medication. Where there is biliary disorder, the internal administration of narcotics is often injurious, by impairing the tone of the intestinal canal; and my own experience leads me to the assurance that the external application is at least equally efficient as a remedy. In inflammation of the stomach and bowels, opiates internally produce constipation, diminish the vital energy of the whole canal at the very time when every effort is called for by the *vis medicatrix* to arrest and repair disease and disorganization. The application of narcotics *ab extra* seems to lead to their absorption into the blood, so that they act generally as well as locally on the system.

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7. *On the Medical Administration of Ozonized Oils.*—Dr. Theophilus Thompson read an interesting paper on this subject before the Royal Med. and Chirurg. Society June 28th, 1859.

The author, after some general remarks on the properties of ozone, describes the results obtained from its administration in association with oils; the oils being ozonized by exposure for a considerable time to the direct rays of the sun, after previous saturation with oxygen gas, according to the process adopted by Mr. Dugald Campbell. The cases of fourteen consumptive patients to whom the ozonized oils were given are detailed; and the principal facts noted are also appended in a tabular form. The conclusion to which these experiments point is, that the administration of ozonized oils has a remarkable tendency to reduce the frequency of the pulse. Of the fourteen patients whose cases are detailed in this communication, there are only two in whom no such effect was observed; and although in a few instances the effect may have seemed insignificant or transient, in the larger proportion it was very considerable, and must be attributed to the ozone rather than to the oil, since it was repeatedly manifested in patients who had taken cod-liver and other oils without any reduction, or even with an acceleration, of the pulse; and further, the effect on the pulse was nearly as distinct when the ozone was associated with the oil of the cocoa-nut, or of the sunflower, as with that of the cod-liver. This circumstance is the more significant, since the administration of sunflower oil without ozone has not ap-

peared to the author to manifest any important remedial power. The reduction of pulse was usually observed in two or three days, and often continued progressive. A reduction of twenty beats was observed in certain cases to occur respectively in two, three, four, and six days; in other instances a reduction was noted of twenty-four pulsations in fourteen days, thirty-four in thirteen, thirty-six in twenty-two, forty in eleven. In one patient the pulse fell as low as 60—probably considerably below the natural standard; but in most of the favourable instances the reduction stopped when that standard was obtained. The apparent effect of the remedy is one which, prior to experiment, the author would not have anticipated. No other obvious result was noticed, excepting a general improvement in the patient's condition. In some of the patients the use of simple and of ozonized oils was alternated. In one case the alternation was made three times, and the result was in each interchange of treatment so direct and remarkable as to make that particular example equivalent in force to three experiments. In addition to the patients under his own observation, the author refers to four instances noted by Dr. Scott Alison, who obligingly pursued the investigation during Dr. Thompson's absence from the hospital. In these four cases the disease was in the third stage. In two, a remarkable reduction in the rapidity of the pulse, amounting to about twenty beats, occurred under the use of the ozonized oil, while the improvement induced could not be referred to any other cause. Dr. Alison remarks: "I attach some value to this observation; for I prescribed the oil totally divested of all prejudice in its favour, and I have always been reluctant on imperfect grounds to refer results to the operation of medicines. If ozonized oil can reduce the rapidity of the circulation—a feature of great prominence in phthisis—this remedy possesses a most valuable property, rendered still more valuable by its contributing at the same time to improve the general health." The author mentions having used ozonized oil of turpentine with marked and prompt advantage in some cases of hæmoptysis, but has not sufficiently repeated the experiment to feel entitled to express an opinion as to its remedial superiority over ordinary turpentine. He adds that, should more extended observation establish for ozonized oil the property indicated by these experiments, it will prove a valuable addition to our list of remedies, especially in consumption (which is a disease peculiarly characterized by hurried action); but not, perhaps, exclusively in this disorder, since there are other morbid conditions in the treatment of which it is very important to lower the pulse without reducing constitutional strength.—*Med. Times and Gaz.*, July 16th, 1859.

8. *Glycerine Ointment for Itch.*—M. BOURGUIGNON, so well known in Paris by his successful researches on "the acarus scabiei," has published in the *Gazette Médicale* the following formula. One general friction, not preceded by soap ablutions, is sufficient: Yelks of two eggs; essence of lavender, lemon, and mint, of each seventy-five drops; essence of cloves and cinnamon, of each 120 drops; gum tragacanth, half a drachm; well pounded sulphur, twenty-six drachms; glycerine, thirty-two drachms. Total weight, nearly eleven ounces. Mix the essences with the yelks of egg, add the gum tragacanth, make a good mucilage, and then add very gradually the glyccrine and sulphur.

Many cures have been obtained by this preparation, which has the advantage of giving no pain.

The well-known Helmerich ointment being really useful, M. Bourguignon has modified it, and substituted glycerine for the axunge. In the altered form the preparation is not any dearer, and is as efficacious, and less painful than the original ointment. It does not grease the clothes, and has an agreeable perfume. Gum tragacanth, fifteen grains; carbonate of potash, thirteen drachms; well pounded sulphur, twenty-six drachms; glycerine, fifty-two drachms; essence of lavender, lemon, mint, cloves, and cinnamon, of each fifteen drops. Total weight, nearly eleven ounces. Make a mucilage with the gum and one ounce of glycerine, add the carbonate, mix until it is dissolved, and then gradually add the sulphur and glycerine; lastly, pour in the essences. With this compound, M. Bourguignon advises two general frictions of half an hour, within twelve hours of each other, and followed, twenty-four hours afterwards, by a simple warm bath, as the glycerine is soluble in water. Two-thirds of the preparation should be used for the first friction, and the other third for the second.

9. *Pigmentum Album in some Cutaneous Maladies.*—Mr. Alfred Freer calls (*Lancet*, June 18, 1859) the attention of the profession to the great value of white paint as a remedial agent. Mr. F. states that in *erysipelas* the most striking benefit results from its application. "After erysipelas," Mr. F. says, "the paint proves of the greatest service perhaps in eczema in its several forms. In chronic eczematous eruptions of the aged it affords much comfort, and often speedily effects a cure. Of late years I have extended its employment to other complaints of the skin, including herpes in its several forms. I have tried it in some cases of smallpox, with the view of diminishing the number of vesicles on the face, and of controlling their size. The latter indication it seems likely to fulfil; but I cannot speak with confidence about the former, the papules being already numerous at the time of my visit. I have also used it in several cases of carbuncle and furuncle. The first was in an instance of a huge carbuncle, situated on the loin of a man, and rapidly extending, notwithstanding free incisions, linseed poultices, and appropriate constitutional treatment. I applied a thick, wide circle of paint round the swelling, and dressed with resin ointment and cotton wool. There was no advance of the disease from that time, the centres rapidly broke up, and recovery took place. It is, however, probable, that the omission of the warm poultice may have contributed to the improvement, for I have often observed that warm poultices, however well made, seem to foster and spread carbuncular inflammations.

"The paint seems to act in two ways: first, and chiefly, as an efficient excluder of the air—that great irritant to the cutaneous surface when disordered; and, secondly, as a direct sedative to the sentient nerve filaments, rendering them less prone to become involved in inflammatory action. In boils it relieves the painful tension, and favours resolution. In some forms of painful ulcers of the leg, of a small size, it gives great relief. In galling of the skin, where anasarca is present, it is also of use, and is the best application that we have in burns of the first and second degree. But it is in erysipelas that its triumph is most manifest; the patient soon finds the comfort of it; the tight shining skin soon becomes wrinkled and shrunken; indeed, the inflammation very rarely extends after the second or third painting.

"The manner of applying it is by means of a feather, painting the affected parts and *a little beyond*, and laying on a fresh coat every two hours or so, until a thick layer is obtained, and then sufficiently often to maintain a covering. In erysipelas, it peels off in a week or so with the shed cuticle, leaving beneath a smooth, clean, healthy surface."

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

10. *Treatment of Asthma by Coffee.*—Dr. Hyde Salter states (*Edinburgh Med. Journ.*, June, 1859) that "one of the commonest and best-reputed remedies of asthma, one that is almost sure to have been tried in any case that may come under our observation, and one that in many cases is more efficacious than any other, is strong coffee. To the question, 'Have you tried strong coffee?' the asthmatic is pretty sure to answer, 'Yes;' and he is also pretty sure to add that it gives him relief.

"About the *modus operandi* of this remedy I was long puzzled; I could not make it out; and it is only lately that I think I have stumbled upon it. The *rationale* of its efficacy is, I think, to be found, on the one hand, in the physiological effects of coffee—the particular nervous condition that it produces; and, on the other, in a feature in the clinical history of asthma which I have long observed, and of which I think the efficacy of coffee is highly corroborative.

"This fact is, that *sleep favors asthma*—that spasm of the bronchial tubes is more prone to occur during the insensibility and lethargy of sleep than during the waking hours, when the senses and the will are active. I have already

referred to this in my observations on the 'Clinical History of Asthma,'[1] in explaining why the paroxysm invariably (or almost invariably) chooses the hours of mid-sleep for its onset. Let me just refer to this subject again, for it is both interesting and important, as it explains a curious and very constant phenomenon in asthma—the hour, namely, of the attack—is highly illustrative of its pathology, and furnishes the key to some of its treatment.

"I think, then, that sleep favours the development of asthma in two ways—

"α. By producing insensibility to respiratory arrears.

"β. By exalting reflex action.

"The way in which sleep favours the development of asthma, by producing insensibility to respiratory arrears, and exalting reflex nervous action, I have already sufficiently explained in the papers on the 'Clinical History of Asthma' to which I have referred.

"There can be no doubt that sleep *does* exalt reflex nervous action. It is a fact so abundantly inculcated by the history of the disease as hardly to require illustration or proof. The phenomena of epilepsy, cramp, lead tremors, and other examples of deranged muscular action, all teach it. It is just as sleep comes on, just as the will is laid to rest, or during sleep, that these different forms of involuntary muscular contraction most commonly occur. Any one, to convince himself of it, has only to fall asleep sitting on the edge of his chair, in such a position that it shall press on his sciatic nerves. As long as he is awake his legs will be motionless; but the moment he falls asleep they will start up with a plunge and suddenly wake him. As soon as he is awake they are quiet and still again, with no disposition to start, till he again falls asleep, and that moment they start again and wake him; and so he may go on as long as he likes. He changes his position, sits back in his chair, and they start no more. I need not explain what so clearly explains itself. I heard, some years ago, of a case of what might be called chronic traumatic tetanus, in which the source of irritation—the excito-motory stimulant—was extensive disease of the hip-joint. The moment the patient fell asleep he was seized with opisthotonos, which, of course, immediately woke him. On awakening, the tetanus vanished; on again falling asleep, it reappeared; and this alternation of falling asleep and waking continued for weeks, if not for months, the patient getting no continuous rest, till he was quite worn out. As long as he was broad awake the tetanus never appeared.[2] Hosts of similar facts, illustrative of the same truth, might be cited.

"Anything that exalts reflex nervous action increases, of course, the potency of reflex stimuli. Now, I have elsewhere endeavoured to show that the phenomena of asthma are, in almost every case, those of excito-motory action, and that the exciting causes of asthma are, in the great majority of instances, such as act by a reflex circuit. They would, therefore, on the asthmatic's falling asleep, immediately acquire a potency they did not before possess, just as the pressure on the sciatic nerve did, in the illustration I have given. Thus it is we see that the asthmatic may gorge himself with unwholesomes, and yet, as long as he keeps himself awake, suffer no consequential asthma; the irritant is there, the undigested food is in the stomach, but as long as he is awake, as long as the will is dominant, it is inadequate to the production of reflex phenomena. But let him fall asleep, and in an hour or two the paroxysm will be established.

"And not only will *sound sleep* determine, by this exaltation of reflex susceptibility, the production of asthma by its exciting causes, but a small dose of the same condition—sleepiness, drowsiness—will favour the supervention of asthma in a proportionate degree. Not only is drowsiness a premonitory sign of an attack, but a powerful predisposer to it; and the asthmatic knows that he yields to it at his peril. I have often noticed in asthmatics that the sleepiness that is so apt to come on after dinner will be accompanied by a slight asthmatic op-

[1] Medico-Chirurgical Review, July, 1858 and 1859.

[2] I was further informed, respecting this case, that, after everything else had failed, sleep was procured, with an immunity from the tetanic spasms, by putting the patient into the mesmeric state. In this way he got rest, and greatly improved; but what was the ultimate issue of the case I do not know.

pression and wheezing: as the drowsiness deepens, so does the asthma, and in this way it may settle down into an attack; but if the patient rouses himself, or if anything occurs to engross his attention so as to wake him up, broad awake, the asthma quickly vanishes. It is in this way, I think, that is to be explained the fact, that asthmatics can dine out late and unwholesomely with impunity; while, if they dine at the same time and in the same way at home, asthma is sure to come on. At home they want that excitement which at a dinner-party keeps the animal functions in a state of exaltation and the mind vividly awake, and effectually banishes the least approach to drowsiness. Of the fact there is not the slightest doubt. I know an asthmatic who can with impunity dine out at seven o'clock, as dinner-eaters of the nineteenth century are apt to dine—shirk nothing from soup to coffee—walk home at ten o'clock, a distance perhaps of four miles, with the wind of a deer-stalker—go straight to bed, and get up the next morning scathless; but if he were to dine at home at six, or even at five o'clock, he would be wheezing at nine, and by four the next morning downright asthmatic.

"I believe a certain amount of the curative influence of fright, or other strong mental emotion, is to be explained in the same way.

"'But why," it may be asked, 'all this roundabout digression? What has all this to do with the curative influence of coffee?' I believe it is simply its explanation. For, what are the physiological effects of coffee? They consist in the production of a state of mental activity and vivacity, of acuteness of perception and energy of volition, well known to those who have experienced it, and to a certain extent very pleasurable, and which is the very reverse of that abeyance of will and perception which, in drowsiness or sleep, so favours the development of asthma. In sleep, will and sense are suspended; after taking strong coffee, they are not only active, but exalted. It produces rapidity of thought, vivacity of spirits, clearness of apprehension, increases tenfold the working powers, and altogether intensifies mental processes. Not only is there no disposition to sleep, but sleep is impossible: the thoughts hurry one another through the mind; the bodily movements are energetic and rapid; and if the effects of the drug are pushed far, a very unpleasant condition is produced, something like that of delirium tremens, *minus* its hallucinations. Now, if the suspension of the will, or its depression, favours the production of excito-motory phenomena, and thus favours the development of asthma, is it unreasonable to suppose that its exaltation should prevent or cure it? It *must* do so—if not positively, at least negatively, by removing the predisposing condition. And bearing in mind this marked physiological effect of coffee—that this exaltation of the animal nervous functions is exactly what it produces—it certainly does seem to me reasonable to suppose that this is its *modus operandi*. And if of coffee, then of strong tea, and alcohol, and ammonia, and ether, and other stimulants of undoubted value in asthma.

"To show that this is the *rationale* of the cure of asthma by stimulants I do not think it is necessary to show that it is only when the asthmatic is drowsy, or has been sleeping, that they do good. If anything that rouses the asthmatic to a state of wakefulness will put a stop to asthma that was creeping on him while he was sleeping or sleepy, *à fortiori* anything that carries him beyond a state of mere wakefulness—that gives him an active, not a mere passive wakefulness, will be still more efficacious, and will be adequate to the checking of an attack that, in spite of his being broad awake, was gaining on him.

"The very frequency with which coffee gives relief, makes it hardly worth while for me to narrate the history of any cases. I should think, from my own experience, that coffee relieves asthma in two-thirds of the cases in which it is tried. The relief is very unequal, often merely temporary, and sometimes very slight: sometimes it is complete and permanent. It is often taken in the morning; and patients will tell you, that previous to taking their coffee they are not fit for anything, can hardly move about; but that taking it is immediately followed by freedom of breathing, and an ability to enter at once on their daily occupations.

"There are two or three practical hints with regard to the administration of coffee that are worth bearing in mind.

"1. It cannot be given too strong. Unless sufficiently strong to produce its characteristic physiological effects it does no good, but rather harm; moreover, if given very strong it need not be given in much bulk, and quantity is a disadvantage—its effect is less rapid, and it oppressively distends the stomach.

"2. I think it is best given without sugar and milk—pure *café noir*.

"3. It should be given on an empty stomach; if given on a full stomach it often does great harm, by putting a stop to the process of digestion: indeed, so much is this the case, that I consider coffee accompanying a meal, especially late in the day, so peculiarly apt to induce asthma, that it deserves to be classed among its special provocatives. I have mentioned elsewhere the case of an individual who never dared to take the usual after-dinner cup of coffee—it would make the simplest dinner disagree with him. But the same asthmatic found in strong coffee, on an *empty stomach*, one of his most valuable remedies.[1]

"4. For some reason or other, I don't know why, it seems to act better if given hot—very hot.

"I have adverted just now to the influence of mental emotion on asthma, and stated my belief that its *modus operandi* was, like that of coffee and other stimulants, by producing an exaltation of sense and will—an intense activity of the intellectual part of nervous action—and proportionately lessening the tendency to excito-motion; and this it does to a much greater degree than stimulant remedies, and its effects are, therefore, proportionately more sudden and complete. It was, indeed, the curative influence of violent emotion, and the observation that it and coffee-taking alike banish that condition in which asthma is most prone to come on, that first suggested to my mind the theory of the action of stimulants on asthma that I have just endeavoured to propound. I think, too, that mental emotion acts, if I may so express it, as a nervous derivative. There are many phenomena, both in health and disease, that seem to show that only a certain amount of nervous activity can be in operation at a certain time; and that, if a nervous action of one kind comes into operation, another that had been previously going on is immediately depressed or arrested. Such is the explanation of the well-known experiment of the two dogs, one of which was taken hunting immediately after a meal, while the other was allowed to sleep. In the one that was taken hunting, digestion, on its return, was found hardly commenced; in the other, it was completely over, and the stomach empty. In the sleeping dog the whole vital dynamics, not being otherwise employed, were appropriated by the function of digestion; while in the hunted dog they were entirely taken up by its energetic locomotion, and drafted away, as it were, from that nervous superintendence of digestion without which the function cannot be carried on.[2] The power of strong emotion, or hard study, in retarding digestion, is an analogous fact. Just in the same way, I think, the extraordinary activity and exaltation of thought and perception, that characterize the state of mind

[1] Since writing the above I have received the following account, from an asthmatic gentleman, singularly confirmatory of my own observations:—

"I used to think," writes my informant, "strong coffee the best of all remedies. I remember one instance especially, only a pattern of many others, but more striking when told. With bent back, high shoulders, and elbows fixed on the chair-arms, I had been labouring for breath all the afternoon. About five o'clock I had two breakfast-cups of strong coffee. The hard breathing disappeared rapidly and completely. My sisters were dancing in the next room, and in less than an hour I was dancing with them, quite free from asthma.

"Of late, coffee has often had an opposite effect upon me. The after-dinner cup of coffee, to which I have been for several years habituated, now produces a sensation of stuffing of the chest, and incapacity of moving about. I believe this is because it stops digestion; and the reason I did not suffer for some years I take to be, that my originally most excellent and enduring stomach could stand it so long, and no longer. Coffee, on an empty stomach, I still deem a most valuable remedy. I do not share the prejudice against putting milk and sugar into coffee that is used as a medicine, provided that it remain *café noir*, and be not made *café au lait*."

[2] See Dr. John Reid's experiments, in Todd's Cyclopædia of Anatomy, vol. iii. p. 899; also those of Bernard and of Bischoff, in Müller's Archiv, 1843.

that the taking of coffee, ether, and other stimulants produces, acts as a nervous derivative in asthma, and diverts from the nervous system of the lungs that morbid activity which engenders the spasm of the bronchial tubes.

"The cure of asthma by violent emotion is more sudden and complete than by any other remedy whatever; indeed, I know few things more striking and curious in the whole history of therapeutics. The remedy that stands next in speed and efficacy—tobacco pushed to collapse—takes time, a few minutes at least: but the cure of asthma by sudden alarm takes *no* time; it is instantaneous, the intensest paroxysm ceases on the instant."

Dr. Salter has arrived from the above facts to the following conclusions:—

"That, since the abeyance of the will favours, in proportion to the degree of that abeyance, the development of asthma, and since the effect of strong coffee is to dispel such suspension or depression of volition, and restore the will to its wonted (or even an unwonted) activity, it is by thus exalting the will, and so disfavouring the development of excito-motory action, that this remedy relieves asthma.

"That the same interpretation applies to the relief of asthma by all other stimulants whatever.

"That thus strong coffee and mental excitement, although apparently so different, belong to the same category of remedies for asthma."

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11. *Diagnosis and Treatment of Hepatic Colic.*—Prof. Trousseau lately directed the attention of the clinical class, at the Hôtel Dieu, to the frequency with which cases of hepatic colic are mistaken for other affections. Although, in its severe form, hepatic colic is readily recognized, yet a slighter form, which is more common, especially in women, is very generally ignored. The reason is, that the pains caused by the small calculi are felt principally in the epigastrium, from which they radiate through the abdomen, the chest, the back, and sometimes even down the thighs. The practitioner, accordingly, is very apt to refer the pain to other organs than the liver, and, in particular, to ascribe it to a spasmodic affection of the stomach. This opinion appears, in many cases, to be further confirmed by the presence of vomiting.

M. Trousseau illustrated these observations by two cases, both women, of sedentary occupation, from forty to fifty years of age. In the case of the first, pain in the epigastrium, with vomiting of matter not containing bile, occurred two days before her admission into the hospital. The severe pain was succeeded by a feeling of languor and fatigue. The fecal matters passed by this woman were collected, washed, and carefully examined, when a calculus of the size of a pea, consisting of cholesterine, was found. The second woman had been subject to "cramps of the stomach" for several years. These had been treated without success. When she came under M. Trousseau's care, she had been suffering for several days from attacks of severe pain starting from the epigastrium, and darting down through the belly into the right flank and into the back. These attacks came on two or three times a day, and lasted for from half an hour to two hours. On the 12th of March the pains continued for five hours, on the 13th for eleven hours: they were accompanied by non-bilious vomiting, and on the evening of the last-mentioned day they ceased suddenly, and were succeeded by slight shiverings and well-marked jaundice. The bowels having been confined for some days, a purgative was administered: the fecal matters were washed, and five calculi with polished facettes were discovered.

Before alluding to the treatment, M. Trousseau entered somewhat minutely into a consideration of the symptoms in these and similar cases. He laid it down as a general rule, that if, in addition to pains of the character described above, there be vomiting of matters not coloured with bile, the symptoms depend upon the presence of a calculus in the common duct; and that, ninety-nine times out of a hundred, the presence of bile in the urine will next day confirm the diagnosis. It must, however, be borne in mind that, although the absence of bile in the matters vomited, and the subsequent occurrence of jaundice, entitle us to give a positive diagnosis, the opposite circumstances—namely, the presence of bile in the vomited matters, and the absence of jaundice—do not justify us in absolutely denying the existence of hepatic colic. In most cases the

jaundice is so slight as to escape the attention of the patient; indeed, generally it is only by the condition of the urine that its existence is revealed. In addition to pain, vomiting, and the presence of bile in the urine, another diagnostic means is at our disposal. This consists in an examination of the fecal matters: for this purpose, the evacuations are to be collected from the time of the cessation of the attack during the next three or four days, as a calculus may occupy this time in passing from the duodenum to the rectum. The matters so collected are to be washed in a hair sieve, until the solid matter is completely broken down. Under any other way of proceeding, the calculus might escape detection. It does not always happen, however, that the calculus, the cause of the suffering, is discharged. It not unfrequently happens that there are concretions in the gall-bladder which are too large to pass along the cystic duct. In such cases, the bodies get partially impacted in the duct, and give rise to much suffering; but on their going back into the gall-bladder, the relief is as complete as when they drop into the duodenum. In these circumstances, we are to be guided in our diagnosis by the sudden appearance and disappearance of the symptoms, taken in connection with the absence of symptoms pointing to disease of other organs.

With regard to treatment, nothing can be done to get rid of calculi already existing; our attention must, therefore, be limited to the treatment of the attack of hepatic colic, and to the preventing the formation of fresh calculi. The treatment of the attack is not very satisfactory, and often the remedies employed do more harm than good. Thus many practitioners prescribe opium; but as opium checks all the secretions, with the exception of the secretion of the skin, it is unfavourable to the accumulation of bile in the gall-bladder, which acts beneficially in helping the expulsion of the calculus. The pain, it is true, is deadened by opium, but the expulsion of the calculus is delayed. The relief of suffering is, according to M. Troussean, more advantageously obtained by chloroform or sulphuric ether given internally, while frictions with an alcoholic extract of belladonna, reduced by water to the consistence of a syrup, are made over the seat of pain. The ether is generally given in the form of capsules, each of which contains eighteen drops; in this way a considerable anæsthetic action is produced, while the biliary secretion is not interfered with. Prolonged hot baths sometimes give relief, though in general they produce little effect. When the attack is past, M. Trousseau generally gives, with a view to improving the digestion, seven or eight pills daily, each containing three grains of extract of ox-gall.

The real treatment of these cases, however, is prophylactic. As above stated, *M. Trousseau* thinks we cannot act upon calculi already formed, although *M. Barth* supposes that, by a vegetable diet, combined with the use of alkalies and turpentine, biliary concretions may be disintegrated. All we can hope for, therefore, is to prevent the enlargement of existing calculi and the formation of new ones; and this we must do by impeding the production of cholesterine. Now, as cholesterine is a fatty substance, we must, in order to diminish its quantity, diminish all the fatty matters of the economy. For this purpose we must look to alkaline substances, which saponify the fats and render them more soluble; to exercise, which promotes their combustion; and to an alimentation which shall contribute as little as possible to their development. *Peyrilhe*, the first professor of therapeutics in the faculty of Paris, noticed that, in large herbivorous animals, such as oxen and cows, which are very subject to hepatic gravel, the gall-bladder was filled with calculi from the month of April to the month of June, and that it ceased to contain any from the beginning of September until the end of December. He thought that the production of cholesterine was favoured in these animals by a dry alimentation, consisting in part of oleaginous grains; while, on the contrary, the chlorophyl, or green colouring matter of plants, acted as a special solvent of this fatty matter. *Peyrilhe* was right; but he had not noticed another important element in their cases—the influence of prolonged repose. In man, a sedentary life acts in the same way as the stalling of oxen; and this is the reason why women are more subject to biliary calculi than men. Green vegetables, though acid, make the urine alkaline; they possess the property of saponifying fats; and you have thus, in exer-

cise on the one hand, and in the use of green vegetables or alkalies on the other, the principal elements of the prophylactic treatment of biliary calculi.

To patients suffering from this affection, we should, therefore, continues *M. Trousseau*, prescribe walking exercise, a regimen having for its basis green vegetables, to which may be added lean meat and fresh fruit thoroughly ripe. The patient should abstain from eating oleaginous matters, such as fat of meat, butter, oil, milk; he should also partake sparingly of amylaceous or gelatinous matters, which, on account of the large proportion of carbon they contain, have the greatest analogy with fat. We may at the same time recommend the use of alkaline mineral waters, such as those of Vichy, the Mont Dore, etc. Not that these are to be given so as to saturate the system with the mineral principles of the waters, but only in such a way as to improve the general health. They should not be given continuously for too long at a time, but their use should be interrupted and again resumed.—*Edinb. Med. Journ.*, July, from *Journal de la Méd. et de Chirurg. Pratiques.*

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12. *Treatment of Diphtheria.*—M. Loiseau, in a communication to the *Gazette Hebdomadaire* (Aug. 19th), urges upon his professional brethren not to use debilitating means in the treatment of diphtheria, and to put their trust in topical and styptic measures. The author adds the following figures, which speak volumes: Out of ninety-five patients treated topically, only two died; one without treatment (we must suppose that the author means that the patient was carried off before the topical treatment could be used), and the other with an imperfect treatment. All the others recovered, without any unpleasant sequelæ, and even without a well-marked period of convalescence. As to the ages of the patients, M. Loiseau divides the cases in the following manner:—

Patients.	Age.	Recoveries.
15	from 0 to 2 years	13
22	" 2 to 6 "	22
9	" 6 to 12 "	9
10	" 12 to 18 "	10
39	" 18 to 60 "	39
Total 95		93

More than half of those whom M. Loiseau attended after they had been treated with emetics and alterants perished, and the greater part of those who recovered suffered subsequently from œdema, anasarca, or paralysis, or had to go through a protracted convalescence.

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13. *Tannin in Large Doses in Albuminous Anasarca.*—Although the internal use of tannic acid is still very limited in France, its employment in large doses has been much recommended lately in other countries, and has been extended to numerous cases which, while proving its innoxious character, appear to exhibit it as possessing some totally new properties. It has been shown to be useful in all cases where it is required to arrest hemorrhages, to give tone to the organism, or to remedy morbid secretions. It has been employed, for example, with great benefit in albuminuria, diabetes, and serous infiltrations.

From these considerations, Dr. P. Garnier has been induced to employ tannic acid in the albuminous anasarca consecutive to scarlatina; and he adduces several cases illustrative of this mode of treatment, drawn from his own experience and from cases recorded by other physicians. The cases all prove that in the general serous infiltration of the tissues complicated with albuminous urine, there is a rapid and simultaneous disappearance of these two morbid phenomena under the influence of tannin alone, administered in a large dose. The conclusions drawn by Dr. Garnier are that tannin, employed in doses of two to four grammes a day (ʒss to ʒj), cures anasarca or œdema developed passively and occurring simultaneously with albuminous urine; that its curative action is manifested by abundant urine, gradually resuming its physiological characters, by perspiration, easy alvine evacuations, return of appetite, &c.; that these signs appear from the second day of the administration of the tannin; that given

in solution in doses of twenty to fifty centigrammes at a time, tannin causes no unfavourable symptoms affecting the digestive passages; and lastly, that the action of tannin appears to be exerted primarily upon the fluids of the economy, the albuminous principles of which it coagulates and renders plastic, and that its consecutive action on the solids appears to be tonic and astringent.—*Brit. and For. Med.-Chir. Rev.*, July, 1859, from *Archiv. Générales de Méd.*, Jan., 1859.

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14. *Local Use of Perchloride of Iron in the Treatment of Membranous Angina.*—Perchloride of iron has been employed with some success in the treatment of membranous angina (*Angine Couenneuse*). M. GIGOT, of Levroux, after having ascertained by experiment the effects of the styptic action of perchloride of iron on fresh pseudo-membranes recently removed from the throats of patients, employed this agent in a certain number of cases of diphtheritic angina, during a severe epidemic of this disease which visited Levroux. He applied the perchloride on the pharyngeal mucous membrane and the diphtheritic exudations by means of a sponge or a piece of lint. The first effect of this application was the immediate expulsion of mucous matters, which were coagulated by the perchloride, and either expectorated by the patient or left adhering to the sponge. The slender and slightly adherent pseudo-membranes were also immediately detached, but the most adherent were removed only in small fragments similar to portions of muscular fibre macerated in water. M. Gigot treated ten patients with this agent, of whom one, an infant four years old, died, from the extension of the disease to the larynx. Of the other nine, there were two in whom the perchloride of iron was replaced, at the end of two days, by the bicarbonate of soda. In these patients the pseudo-membranes were reproduced between each application of the perchloride of iron, and were always easily removed. Lastly, in the seven others the angina was arrested in a few days. M. Gigot never applied the perchloride more than twice in the twenty-four hours. One of the cases was a very well-marked instance of membranous angina in a girl of seventeen, living in a locality where two children had recently died of that disease. There was great swelling of the glands of the neck, fetid breath, difficult deglutition, pulse 110, vomiting, and epistaxis. A grayish pseudo-membrane, of a fibrinous appearance, covered the whole of the right tonsil and extended all along the pillar of the velum palati. The perchloride of iron was applied three times, by means of a piece of lint, over the whole of the pharyngeal mucous membrane as far as the epiglottis, and at the second application the false membranes were detached, their volume was diminished, and they were shrivelled and dried by the perchloride. A gargle of bicarbonate of soda was employed on the same day, and after four days of this treatment the patient entirely recovered.—*Brit. and For. Med.-Chir. Rev.*, July, 1859, from *Gaz. des Hôp.*, Oct., 1858.

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15. *Peculiar Efficacy of Sulphate of Copper in Exciting Vomiting in the Treatment of Croup.* By Dr. MISSOUX.—The importance of repeated vomiting in the treatment of croup is admitted by many practitioners, but the choice of an emetic is a point which has not hitherto been fully determined. Since vomiting has been considered by some as the mechanical act which induces the detachment of the false membranes, tartar emetic has been employed for the purpose. Others have preferred ipecacuanha, the dynamic action of which is less depressing than that of tartar emetic, but there its superiority ends. The sulphate of copper, in addition to its emetic action, possesses a very remarkable property of acting locally, and this peculiarity makes it superior to tartar emetic and ipecacuanha. With the latter substances, the patients derive benefit only from the mechanical act of vomiting, and when the false membranes are expelled, others are formed. The case is quite different with sulphate of copper, for when a solution of this salt is employed, the secreting surfaces are so modified, that no more false membranes are formed, or if they are formed, they no longer present the plasticity which renders them so adherent to adjoining parts. Dr. Missoux, after a practice of eighteen years, states that the sulphate of copper has been in his hands the most successful emetic agent in the treatment of croup.

Its purifying action appears to him the more valuable, because diphtherite (croup) at its commencement is often localized in the throat, and by applying remedies early, the extension of the false membranes to the larynx may be prevented. He wonders that this topical action of the copper salt has not been hitherto observed upon plastic exudations which are visible to the eye, such as cutaneous diphtheria, and that of the vulva, the throat, and the nose, for its effects in these complaints would have induced a speedy conviction of its utility. The dose in which Dr. Missoux administers the sulphate of copper is rather larger than that prescribed by other physicians. For young children he dissolves a quarter of a gramme of the salt in 125 grammes of distilled water, and orders a teaspoonful to be given every ten minutes, until vomiting is produced. After the age of puberty, and in adults, he increases the dose to one gramme, without his having ever witnessed any poisonous effects. The more the solution is concentrated, the more frequently the doses are given, and the earlier its administration is resorted to, the more prompt and certain are the effects of the treatment. Out of thirty diphtheritic cases, Dr. Missoux lost only two. This result may surprise some readers, but he assures the profession that he has determined the existence of croup only after actually observing the presence of the false membranes in the bronchi, trachea, and larynx.—*Brit. and For. Med.-Chir. Rev.*, July, 1859, from *Bull. Gén. de Thérap.*, Dec. 30, 1858.

16. *Anæmia Lymphatica, a New Disease characterized by Enlargement of the Lymphatic Glands and Spleen.*—Much interest was excited amongst the profession by the announcement of Dr. Wilks, at one of the meetings of the Pathological Society during the past session, that the morbid specimens which he exhibited were taken from a patient in Guy's Hospital, whose disease was new, and hitherto unnamed. The essential features of the disease are the most extreme pallor of anæmia, enlargement of one or more of the various groups of lymphatic glands, either internal or external to the body, and a peculiar morbid condition, with occasional enlargement of the spleen; the last depending upon the deposition of an opaque, white, lardaceous material, in isolated masses, or diffused throughout the substance of the organ, and resembling bacon-rind. The malady is so striking, and yet so peculiar, that when carefully studied it is almost impossible to mistake its identity. Six cases are detailed in the second volume (third series) of *Guy's Hospital Reports*, in a paper by Dr. Wilks, "On Cases of Lardaceous Disease and some Allied Affections." All of them proved fatal, as well as those which have since come under our notice. The peculiarities noticeable in these cases were as follows:—

Case 40.—Enlargement of the lumbar and posterior mediastinal lymphatic glands, forming a chain of tumours along the whole length of the spine upon each side of the aorta; spleen enlarged, opaque white deposits through it: age twenty-four.

Case 41.—Lumbar glands much enlarged, and accompanying the aorta along the spine to the pelvis; mesenteric and bronchial glands enlarged; spleen large, with a number of ovoid white bodies: age nine years.

Case 42.—Cervical, mediastinal, bronchial, and lumbar glands enlarged; spleen four times larger than natural, three-fourths of it resembling opaque white tallow: age ten years.

Case 43.—Lymphatic glands of neck, groin, and around the great vessels in the chest and abdomen, enlarged; spleen had a few white tubercles: age sixteen years.

Case 44.—Great enlargement of the absorbent glands of the neck, axilla, and groin; spleen enlarged, with an infinite number of small, white, opaque deposits: age fifty.

Case 45. (Dr. Markham, 4th vol. *Transactions of the Pathological Society.*)—Enlargement of anterior and posterior mediastinal glands, encircling the arch of the aorta; spleen enlarged, with small yellow masses throughout: age thirty.

Some other instances might be added to these; but it will be sufficient to append the following, shown to the Pathological Society in the course of its last session:—

"Enlargement of the cervical, mediastinal, and lumbar glands; the spleen much enlarged, with white deposits throughout: age twenty-two."

The enlargement of the lymphatic glands, which thus seems the peculiar feature of this malady, is remarkable for the lingering form of fatal cachexia which it produces. The extreme pallor of the patient—as we have witnessed at this hospital—at once attracts the attention of the observer.

In relation to the six cases we have briefly noticed, Dr. Wilks observes, in regard to the symptoms during life and the appearances after death—"Their uniformity is too considerable to constitute merely a coincidence of disease between the glands and the spleen, and therefore there is, without doubt, a peculiar form of affection involving these organs, accompanied by an anæmic cachexia, prostration, and death. I say a peculiar affection; for although allied to the tubercular, I believe it to be one not yet recognized under the ordinary forms of disease."

This affection has been mistaken for scrofula, especially where the glands in the necks of weakly children have commenced to enlarge. It occurs to persons of all ages. It may gradually extend over a period of two or more years, when the thoracic and abdominal glands become involved, and slow prostration precedes death.

The intimate structure of the enlarged glands is a fibro-nucleated tissue, and this is not to be distinguished from ordinary fibro-plastic growths. Dr. Hodgkin described a case of this kind in the seventeenth volume of the *Medico-Chirurgical Transactions*, in which he refers to its connection with a peculiar affection of the spleen; but he affixed no name to it. Dr. Wilks correctly styles it *anæmia lymphatica*, which is a very distinctive appellation, the anæmia being the most important result, and tending to the fatal issue. Moreover, it is a simple and good name for it, as he thinks it indicates the most important condition of the malady, and the one often only recognizable when the enlargement of the glands is entirely within. There is no excess of white corpuscles in this disease similar to that observed in the *leucocythæmia splenica* of Bennett, but rather a deficiency of the red, as was observed in the following case, for the notes of which we are indebted to Mr. Hugh Bennett, clinical clerk to the hospital. In this instance, the duration of the disease was three years and a half, and the extreme whiteness of the skin resembled the anæmia of females who have lost much blood. The anæmic bruit was also present.

William B——, aged twenty-seven years, was admitted, on June 8th last, into Job ward, Guy's Hospital, under the care of Dr. Pavy. He was a single man, by occupation a gunmaker, and residing in Fleet street; states that his health has been good up to three years and a half ago, excepting having had an attack of inflammation of the bowels fifteen years since, and three attacks of gonorrhœa four years ago; he had a chancre on penis, no sore throat, no bubo, nor eruption; six months afterwards had enlarged glands in the left groin, which have increased in size ever since; he was never of dissipated habits, and always kept good hours. His parents and brothers are healthy; no history of scrofula in the family. Three years and a half ago he noticed a small lump in the left groin, accompanied with a slight pain. It was the pain, and not the lump, which chiefly attracted his attention. The pain he described as dull and aching, descending the left thigh as low down as the knee, the thigh being at the same time slightly swollen, and also ascending obliquely backwards towards the small of his back. Twelve months ago he was an inmate of St. George's Hospital, under the care of Mr. Hawkins, who treated him with iodide of potassium and cod-liver oil internally, and tincture of iodine locally. He was presented by Mr. Hawkins, at the expiration of eight months, slightly relieved. He resumed his original occupation, and followed it for a short time, until he became so weak that he was compelled to give it up.

The patient is a man of middle stature, light complexion, gray eyes, and light hair; presenting all the appearances of having lost an abundance of blood—suffice it to say, however, that he has not lost any; skin of his body generally extremely white, hot, and pungent; conjunctivæ watery. Chest well formed, mobile during respiration, and resonant on percussion; equally resonant posteriorly. Lungs healthy. On listening to the sounds of the heart, there could be

heard indistinctly a systolic bruit in the course of the aorta ("anæmic bruit diagnosed"). He never had rheumatism or pain in his limbs. His voice is strong and clear; tongue moist and clean; has evidently an enlarged spleen bulging out of the left hypochondriac region; it can be distinctly felt through the abdominal walls; has enlarged glands in the left groin, about the size of a goose's egg; no other glands perceptibly enlarged; has general anasarca; skin pits on pressure in every part of the body and extremities; urine healthy, specific gravity 1017; bowels open; motions of a clay colour, "pale."

Mr. Stocker, the apothecary, saw the patient on the 8th of June, and ordered the following medicine: two grains of iodide of potassium, in an ounce of julep of ammonia, three times a day.

June 9. He had a good night. His blood was examined microscopically this morning, and was found to contain an excess of white corpuscles, "comparatively speaking;" but, in reality, there seemed to be a deficiency of the red corpuscles, rather than an excess of the white.

11*th*. Dr. Pavy prescribed five grains of the citrate of iron, with quinine, thrice a day.

13*th*. Has a severe headache this morning, and a troublesome cough is coming on, without any expectoration. To have five grains of extract of conium night and morning; also, five ounces of wine daily.

16*th*. Feels better since he has had the wine; cough much about the same. Ordered, lactate of iron, five grains; iodide of potassium, two grains; syrup of poppies, half a drachm; water, an ounce: three times a day.

18*th*. Expresses himself as being better; lower extremities still very œdematous; coughs a good deal at night.

July 4. Thirst excessive; appetite lost; expectoration more abundant, of a bluish gray, slightly frothy character, and strongly adherent to the bottom of the utensil.

8*th*. The patient evidently seems much worse; lies prostrate in bed; is not able to sit up for five minutes together; mouth and tongue very dry, the latter being brown in the centre, and white along the margins.

9*th*. Had a very restless night; respiration became hurried; pulse quick and feeble; eyes turned upwards; mouth wide open, and dry. Ordered, eight ounces of wine; ammonia and serpentaria.

10*th*. Unconscious; lies on his back, with his head thrown backwards; pulse rapid, and extremely feeble.

11*th*. Expired at 6 A. M. Died quietly.

Post-mortem examination thirty-three hours afterwards.—On opening the thoracic cavity, it was found to contain a larger quantity of fluid than is usually met with in health, and an excess of fluid was also found in the pericardium. Lungs free from adhesions; patches of softening were here and there found on cutting into them. Liver, kidneys, and heart healthy; the latter contained no clot, except a very small one in the left ventricle; blood being remarkably thin, like port wine and water mixed. Spleen enlarged; weighed twenty-four ounces and a half; full of white tubercles. Lumbar glands greatly enlarged; inguinal glands also enlarged.—*Lancet*, Aug. 27, 1859.

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17. *Defective Assimilation in Infants—its Prevention and Treatment.*—Dr. Routh read a paper on this subject before the Medical Society of London. The object of the paper was to show that most of the mortality of infants was due to defective assimilation. Defective assimilation was almost always the result of want of breast milk and the use of injudicious food; the disease was most effectively prevented by supplying this milk. Dr. Routh then detailed the result of breast milk exclusively given, artificial food without breast milk and with it, or the development and mortality of children, from tables of Messrs. Merei and Whitehead; from which he showed that in proportion as breast milk predominated, in proportion was good development observed, and *vice versa*. He then showed that the most frequent diseases amongst children were abdominal diseases, occurring in the proportion of 23.4 per cent.; developmental diseases in that of 8.8 per cent. of all cases; rachitic diseases constituting 3.2 per cent.; atrophy or marasmus, 5.2 per cent. He believed, however, that all these were

produced by defective assimilation, the former in most cases being sequelæ of it; atrophy or marasmus being only the more marked and characteristic stage.

Dr. Routh then described the disease as consisting of three stages: first, or premonitory, in which peevishness, some loss of flesh, occasional attacks of indigestion, acid eructations, &c., were most prevalent; in the second stage, *emaciation* was more marked, eyes became unusually bright, much loss of digestive power, sometimes with diarrhœa and lientery; third, or exhaustive stage, generally attended with diarrhœa, aphthæ, frightful emaciation, complete loss of digestion, &c. Sometimes the disease from the second stage passed on to tuberculosis, rachitism, and most developmental disorders, and not to the third stage.

Causes.—The predisposing causes were—hereditary tubercular habit, and exanthemata; exciting causes—bad air, want of cleanliness, injudicious food, and especially an atmosphere contaminated by too many children being congregated together.

Post-mortem appearances.—Three kinds: emaciation very great, loss of adipose, cellular, and muscular tissue, in all varieties; but in one, where diarrhœa has been present, red patches, or aphthæ over the alimentary mucous membrane, these aphthæ often containing the oïdium albicans. In other cases, also with diarrhœa, the mucous membrane exuding a reddish coloured mucus, intensely acid. In others, without diarrhœa or with it, Peyer's glands projecting, and enlarged in patches, as in Asiatic cholera. In all, undigested matter in canal, with very fetid fecal matters.

The disease seems to be gradual, passing on to entire loss of *primary* assimilation; the secondary still persisting, although inactive from want of assimilable matters to take up. Albuminous, starchy, and oily matters were not digested.

The *treatment* consists in supplying fatty acids and already artificially digested animal and occasionally vegetable substances, especially human milk. If this could not be sucked, it should be collected in a cup and given by the spoon. Dr. Routh strongly animadverted here upon the absurd dogma, that it is wrong to mix human and cow's milk. He, on the contrary, believed the plan not only safe, but the very best practice in many cases, and the only means of saving an infant's life. Simple juice of meat, and this with vegeto-animal food, he had found most useful in fulfilling these indications. The remedies were of two kinds: 1st. Those calculated to increase cell growth and development. Phosphate of soda, producing an emulsion with fats, thus allowing of their assimilation; chloride of potassium, to dissolve carbonate of lime; phosphate of lime, to enable blood to take up more carbonic acid, and thus hold in solution more carbonate of lime (these substances severally strengthening muscular and bony structure); lime-water, to provide lime to blood. 2d. These last also acted as some of the remedies calculated to allay local irritation of the alimentary canal. Carminatives were useful, such as dill, but especially cinnamon-powder, to correct flatus and to check diarrhœa. Anodynes were also (however objected to generally) strongly recommended by the author. For the diarrhœa, when present, nitrate of silver and sulphate of copper were the best remedies. Wine was also found very serviceable, even if given in large quantities. These remedies, however, it must be confessed, proved in most cases of no avail in the third stage, which was, he might say, almost incurable; but they acted very effectively in the second and first stages.—*Lancet*, June 18, 1859.

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18. *Traumatic Diabetes.*—Dr. PLAGGE reports a case brought on in a young man by a blow on the occiput, which, besides a swelling, seemed to produce no effect. In two or three days, however, the youth was seized with amblyopia, thirst, and craving for food, while he passed a large quantity of urine which yielded much sugar. There was no uneasiness about the liver nor jaundice. Tannin and opium together, with flesh diet, were prescribed during a week, with little effect, three or four quarts of urine being passed daily. Under the use of bicarb. of soda, with flesh diet, however, the sugar gradually disappeared from the urine, although this fluid continued to be passed in too great abundance, as simple polyuria, for two months longer.—*Med. Times and Gaz.*, June 11, 1859, from *Virchow Archiv.* B. xiii.

19. *Employment of Water in Auscultation.*—Dr. S. Scott Alison, when lately engaged in performing experiments upon the propagation of sound, ascertained that water placed between the aperture of a hearing-tube and a solid-sounding body, gave an increase to the sound conveyed to the ear without it; and that the amount of increase of sound thus procured by the interposition of water is so considerable as to very materially add to the value of hearing-tubes, when employed upon the sounds of solid bodies. The quantity of water which will give an increase of sound need not be more than a fine film under the hearing-tube, and extensive enough to connect the entire circumference of the aperture with the solid-sounding body.

The increase of sound procured by the interposition of water varies much with the material of which the hearing-tube is formed. Wooden and metallic plate-tubes, such as are firm and non-flexible, receive no advantage from water; tubes such as the flexible stethoscope and ordinary hearing or speaking tubes acquire a material reinforcement from water, while tubes made of India-rubber gain a very great advantage from the interposition of this medium. It may be stated, as a general rule, that the more a hearing-tube becomes a mere air instrument, and departs from the character of a solid conducting instrument, the more water adds to its acoustic value. When a tube, by means of firm solid walls, becomes more of a solid conductor of sound, water becomes less useful, till at last, as in the case of a wooden stethoscope with only a fine bore, it diminishes sound, and acts as a damper.

The construction of hearing-tubes materially affects the results obtained from the employment of water. A tube which is provided with an ear-piece that enters the meatus externus serves to show the augmenting property of water more than one having a circular disk to cover the external ear. A cup or expanded extremity, for the collection of sound, serves likewise to increase the reinforcing power of water. The contraction of the tube beyond the cup to the uniform size of the external meatus favours the same result.

Whatever interferes with the free undulations of the air contained in the tube reduces the property of water under consideration. If a piece of membrane of the greatest tenuity be stretched across the tube or bore of the instrument, between the cup or aperture and the aural extremity, the result is materially reduced.

If a tube be converted into a solid body by closing up the hollow part, water far from increasing the sound heard, materially reduces it. A solid rod of wood, such as a ruler or a solid stethoscope, is deteriorated by water employed in the manner under consideration.

The evenness or unevenness of the surface of sounding bodies materially affects the result obtainable from water when hearing-tubes are employed. The augmentation of sound is much greater when the surface is rough and uneven, and thus prevents the exact fitting of the cup of the hearing-tube upon it.

The consistence of solid bodies naturally affects the result of the employment of water. The effect is greater in the case of hard resisting bodies, such as wood or stone, than of softer bodies, such as leather.

The freedom or constrained position of the cup or the tube, in respect of capability of vibrating, very materially influences the action of water. If the cup be held firmly by the fingers the result is greatly deteriorated. If the cup be pressed to the bottom of a vessel containing water, the sound heard is greatly less when it is kept free in media aqua.

In order that water shall augment sound in the manner under consideration, viz., from solid bodies through hearing-tubes, it is necessary that the water come in immediate contact with the aperture of the tube, or be separated from it only by some thin movable or vibrating body, such as thin India-rubber, gutta-percha, or other membrane, or other solid body which, in reference to the strength of the sound, shall be small and vibratory. A thin membrane offers little impediment in the case even of a fine delicate sound, but a thin layer of wood, the one-fiftieth part of an inch in thickness, will materially counteract the augmenting power of water in the case of a fine sound, such as that of a watch or even of a tuning-fork. The more the intervening solid body is indisposed to vibrate, the more it interferes with the sound-augmenting property of water. For a layer of

wood one-twelfth of an inch thick, placed between the water and the hearing-tube, to admit of the advantage of water being even in some degree manifested, the sound proceeding from the solid body beyond the water must be very loud, and capable of violently agitating the water, and the wood placed between it and the hearing-tube. Layers of India-rubber offer much less impediment to the augmenting power of water; these, in fact, act as membranes. Thin membranes offer no sensible impediment whatever.

"If we desire," says Dr. A., "to employ water as an agent in auscultation and in aid of hearing-tubes, difficulties at once present themselves. To apply water to the chest is easy enough; but it is not so easy to retain it there in a suitable manner. The application of water may be unpleasant to the patient, and by wetting his clothes may give rise to much annoyance and inconvenience. The idea occurred to me that if I could confine water in some material that would not interfere with its sound-intensifying power, a material advantage would be gained, and we should have a convenient mode of reinforcing hearing-tubes. In the preceding part of this paper it was stated that a thin membrane offers no sensible impediment in the way of water intensifying sound, although thick and non-elastic or non-vibrating bodies did, and taking advantage of this fact, I made a water-proof bag of India-rubber to contain water. The India-rubber membrane is so thin as to offer little or no resistance to the undulations of water. The bag is about the size of a large watch, and is sufficient to receive the extremity of an ordinary flexible stethoscope, or to form a medium of connection between the external ear and a solid sounding body such as the human chest. The thickness of the bag is not above the third of an inch. Nothing is gained by greater thickness, and the advantages of sound having to travel only a short way, and also of only a very little weight pressing upon the sounding body, are secured. The sonorous pulses, so to speak, are readily taken up from the solid body or the chest, and are conveyed through the water, and membrane on either side, and reach the edge of the aperture of the hearing-tube and the contained air, whether the instrument be the flexible stethoscope, the human ear, or any other hearing-tube. This instrument possesses valuable advantages, and I have therefore ventured to give it a name, that of the hydrophone. It fits admirably and exactly upon the part of the chest to which it is applied, however uneven and irregular, whether this be a projecting rib or a deeply sunk intercostal space, a broad level surface or a narrow depression, the clavicle or spine of the scapula. By its other side the hydrophone fits as exactly to the aperture of the hearing-tube or to the exterior of the human ear. Every part of the solid body covered by the hydrophone contributes its quota of sound. The fitting of the instrument to the hearing-tube prevents the escape of sound from the contained air to the external atmosphere, and by this means resonance of the contained air, and of the containing tube is greatly promoted, with the result of a greatly augmented sound. The edge of the hearing-tube sits so easily, and with so little resistance from the water-bag, or hydrophone, that the vibrations which are communicated to it are readily reciprocated, and find none or little of that resistance so fatal to its vibrations when pressed upon a solid body.[1]

"The hydrophone may be employed either in aid of the stethoscope, or as a distinct acoustic instrument by itself. In the case of wooden stethoscopes which are solid, applied to the distal aperture, it is injurious by damping sound; in the case of the hollow wooden stethoscope it is of no material value, for water is an indifferent conductor of sound from a solid body to another solid body, and it may be stated that the hollow wooden stethoscope is more a solid than an air instrument. What it gains as an air instrument from the water, is lost as a

[1] A fact which I have very lately ascertained appears to me well worthy of being here recorded. It bears directly upon the importance of perfect freedom of the cup of flexible stethoscopes. A cup held rather firmly upon a piece of wood upon which a tuning-fork is placed gives a fainter auditory sensation than when held loose, but the auditory sensation is further and very materially reduced, if instead of being held firm, the cup be glued to the piece of wood. Here we have perfect continuity but reduced sound. The explanation is found in the reduced vibration.

solid instrument. In fact, more may be lost in the one way than is gained in the other.

"It is in the case of the flexible stethoscope that the hydrophone forms a material aid in auscultation by hearing-tubes. The flexible stethoscope is here meant to signify all stethoscopes into whose construction flexible tubes enter, either forming the whole tube part of the instrument, as in the ordinary flexible stethoscope, or part only, as in Camman's double stethoscope, or my own differential stethoscope. These instruments are essentially air instruments, and I am glad to say that Camman designated his instrument such when he first made it known; for this corresponds with my own investigations. In the case of all these instruments the intensification of sound by the hydrophone is so material, that I have no hesitation in saying that without its employment their resources are by no means fully made available. To have the full benefit of any one of these instruments the hydrophone is essential. Respiratory sounds, healthy and morbid, which are audible with the simple flexible stethoscope, are made more audible when the hydrophone is placed under it. Rhonchi and moist crepitation are strikingly augmented. Vocal resonance, solid and cavernous, dry and moist, are in a marked manner amplified. Pectoriloquy accompanied with much vibration of the chest, is increased in a very striking manner. Murmurs of the heart, usually heard in a mitigated form only by flexible stethoscopes—at least in my experience—are conveyed to the ear so as to produce a very distinct and defined sensation. To sum up, it appears to me that flexible stethoscopes, however ingeniously constructed with twisted wire and other contrivances, are, compared with the simple wooden stethoscope, essentially deficient as sound-conveying instruments, some few sounds excepted; but that the hydrophone greatly counteracts this deficiency and brings them up much more to the rank of Laennec's stethoscope. But the inquiry may be made, What good purpose can the hydrophone subserve under such circumstances, if it can only bring a second-rate instrument nearly up to the position of another? The answer is this, There are situations and occasions which require the flexible instruments, as is well known, and it is certainly important to render them, defective though they are, as useful acoustic instruments as is possible. It may be possible to place the cup of a flexible tube with a hydrophone under it, where it would be difficult or impossible to employ a wooden stethoscope. In auscultating the sounds of the gravid uterus, or of the fœtus in process of birth, a flexible stethoscope with a hydrophone might possibly afford evidence that would under certain circumstances be very important.

"Pulsating tumours of the chest, too tender to admit of the pressure of the wooden stethoscope, or even of the naked cup of the flexible stethoscope, or upon which it might be dangerous or hazardous to exercise pressure, are well auscultated by means of the flexible stethoscope, provided either with a flat ear-piece or a tubular ear-piece to enter the meatus, having the hydrophone placed under it and upon the morbid part. The hydrophone takes up sound from every part; however uneven it may be, it forms a soft water cushion, and it serves, at the same time, greatly to reinforce sound procured without it. In practice I have on many occasions, with the aid of the hydrophone, distinctly heard murmurs of the heart, of the existence of which I had been in doubt when simply employing the flexible stethoscope.

"I have observed that when the flexible stethoscope is employed with the clothes of the patient intervening, as is unavoidable under some circumstances, as, for instance, when time does not admit of undressing, or when the patient would suffer by exposure to cold, the impression made upon the ear by lung and heart sounds is greatly enfeebled and is very unsatisfactory. This evil attendant upon the employment of the flexible stethoscope, including Camman's double stethoscope, and my own differential stethoscope, is obviated, I may say altogether, by placing the hydrophone under the stethoscope. The reinforcement of the sounds is so great as to be quite surprising, as well as very useful. An examination that would be worthless is by the use of the hydrophone rendered satisfactory. This result is obtained partly by a gentle yet efficient pressure exerted upon the clothes, compressing them into less density by excluding layers of air. But a great portion of the result is due to a more complete closure of

the aperture of the instrument, attained by a surface of water covered by thin membrane, than can be secured by one of porous and comparatively uneven cloth, etc.

"In the examination of children, the employment of the hydrophone, together with the double or the differential stethoscope, is most satisfactory, and is well deserving of notice here. I believe it to be a very great improvement upon the use of the wooden stethoscope, and well worthy of the adoption of the profession in dealing with children. The intensity of sound procured is nearly the same as in the case of wooden instruments. The cup of the stethoscope fits perfectly upon the water, which it can seldom do upon the sharply-curved chest of infants, and thus much economizing of sound is secured. For the same reasons no irregular pressure is endured. The child suffers no pain, and is spared one great source of restlessness and vociferation. Lastly, the employment of the hydrophone and a flexible stethoscope causes no alarm, as in the case of the wooden instrument, and is very generally the source of much interest and even amusement to the child, who consequently remains in a state of quietude very favourable for the examination of the auscultator. I constantly examine children with the utmost ease and deliberation in this way, whom I should otherwise have to send away after fruitless efforts at auscultation.

"The same method of examination, viz., by the hydrophone and the flexible stethoscope, including Camman's double stethoscope and my differential stethoscope, is very valuable in the case of wasted patients. The employment of the wooden stethoscope with such persons is frequently very painful, and is positively cruel. Moreover, as the aperture fits very badly, it is highly unfavourable for the propagation of sound to the ear. Now, the water-pad, or hydrophone, sinks into the hollowed intercostal spaces, and comes into complete contact with the entire circumference of the mouth of the stethoscope, at once collecting more sound, preventing its escape, and obviating the occurrence of painful pressure.

"Upon blistered surfaces and parts tender either from internal disease or from external applications, this mode of auscultation is much superior to that by the wooden stethoscope. When an examination by the latter instrument is positively refused, one by the method under consideration is at once permitted as being altogether painless. Many patients, particularly females with tender and wasted chests, have expressed to me their satisfaction with, and surprise at, this painless mode of examination.

"A very slight augmentation of sound, in the case of some sounds, is procured by placing the hydrophone on the proximal or aural extremity of the ordinary wooden stethoscope, but it is scarcely available in practice.

"The bag of water, or hydrophone as I have ventured to call it, is of service not only in the case of artificial hearing-tubes, but in that of the natural hearing-tube, viz., the ear. Applied to the naked chest it forms a stethoscope not materially inferior to the best wooden stethoscope, length excepted. When the part auscultated is very uneven or much curved, by fitting well, it excels the wooden instrument in an acoustic point of view. By fitting well also upon the external ear of the auscultator, and by closing thoroughly the meatus externus, great acoustic advantages are obtained. The sonorous undulations are freely conveyed to every part of the external ear, the air in the meatus comes in immediate contact with the instrument without the possibility of any sonorous undulations escaping. The sonorous undulations of the walls of the tube and those of the inclosed air react upon each other. The water again reciprocates as a sounding-board, and the general resonance is greatly promoted by the thorough closure of the tube. The closure of the meatus is greatly more complete in the case of the water-bag than can be procured by any ordinary wooden disk. The complete closing of the ear, it may be remarked, is useful chiefly by promoting resonance, and not, as has been erroneously taught by some eminent stethoscopists, by excluding other sounds.

"The hydrophone forms a great aid to the external ear when the patient is to be examined with his clothes still upon him. As a general rule, good stethoscopists strip their patients for examination, but it may be sometimes desirable to examine through the clothes, as in probably trivial cases, when there is little

time, when the patient suffers from cold, or when the examination is only a supplementary one, or a rough observation will suffice. In such an examination the hydrophone proves of great value: a sound which is very indistinct to the ear placed upon the clothes, becomes full and distinct when the hydrophone is employed. Voice sounds, heart sounds, and rhonchi are greatly improved. Employed in this manner, I am inclined to think the hydrophone is equal, if not superior, to the wooden stethoscope.

"The water instrument has this material advantage, that it is very readily moved from one place to another—*i. e.* from one part of the chest to another. For example, in examining the back, the whole of the surface may be, as it were, run over without once lifting the head, the hydrophone being shifted with the ear upon it from place to place.

"In respect of delicacy, the hydrophone is not without some value; for, in the case of females, the interposition of this instrument meets the objection to the immediate contact of the ear of the auscultator with the chest of the patient. When the application of the hydrophone gives annoyance from its coldness, this evil may be readily obviated by placing the instrument in warm water, or by otherwise warming it. Minor advantages of this instrument are its portability and cleanliness."—*Med. Times and Gaz.*, July 2 and 9, 1859.

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20. *Idiosyncrasies.*—Mr. T. W. Nunn, Assistant Surgeon to Middlesex Hospital, relates (*British Medical Journal*, June 11th, 1859) the following examples of this:—

Case I. *Poisoning by Rice.*—J. M., an occasional patient, cannot eat rice in any shape without extreme distress. From the description given of his symptoms, I believe spasmodic asthma to be the cause of his discomfort. On one occasion, when at a dinner party, he felt the symptoms of rice-poisoning come on, and was, as usual, obliged to retire from the table, although he had not partaken of any dish ostensibly containing rice. It appeared, on investigation, that some white soup, with which he had commenced his dinner, had been thickened with ground rice.

Case II. *Rice-poisoning.*—A gentleman who, as in the preceding case, could not eat rice "without being suffocated," took luncheon with a friend in chambers. The fare was simple—bread, cheese, and *bottled* beer. On the usual symptoms of rice-poisoning seizing him, he informed his friend of his peculiarity of constitution. The symptoms were explained by the circumstance of a few grains of rice having been put into each bottle of beer, for the purpose of exciting a secondary fermentation.

Case III.—A gentleman, some time since under my treatment for stricture, informed me that he could not eat figs without experiencing a most unpleasant formication of the palate and fauces; and that the fine dust from split peas produced the same sensation, accompanied by a running at the nose. The father of this gentleman suffers from hay-fever at certain seasons.

Case IV.—Mr. P., himself a gentleman of a peculiarly nervous temperament, states that his father cannot endure the sensation produced by handling a russet apple. He also communicated to me

Case V.—That of Mr. T., who cannot remain in a room in which there is a cooked hare, on account of the peculiar effect produced on his system.

Case VI.—Miss ——, after eating egg, suffers from swelling of the tongue and throat, accompanied by "alarming illness."

Case VII.—Miss ——. In this case, somewhat similar effects follow the taking of honey of any kind, and especially honey-comb, into the stomach; viz., swelling of the tongue, frothing of the mouth, and blueness of the fingers.

Case VIII.—The following is an extract from a note received by me from a lady, who says: "I had on three mustard plasters—one on the throat, one on the back of the neck, and another under the left shoulder. They remained on half an hour. Cotton wool was applied on their removal. About thirty hours afterwards, a painful stinging sensation commenced in the back of the neck, followed by violent twitching of the muscles of the face, arms, and legs, which continued in regular succession through the whole night. It yielded, after about twelve hours, to hot fomentations of poppy-heads applied to the back of the

neck." It cannot be ascertained that any medicine containing strychnia was taken.

CASE IX.—A gentleman, a member of the medical profession, with whom I am well acquainted, suffers from nettle-rash after eating veal. Veal has the reputation of being particularly indigestible. The above instance of the production of urticaria from its use is, doubtless, not an uncommon one.

CASE X.—I have been informed of a lady who cannot remain in a room where there is a cat. Although the cat may be concealed, the lady's peculiar sensations immediately declare to her the presence of the animal.

CASE XI.—A patient under my care, since dead of cancer, was invariably thrown into a state of nervous excitement by the exhibition of the compound infusion of orange-peel.

CASE XII.—A personal friend of my own suffered from erythema nodosum after eating shrimps, although these were perfectly fresh. I believe shell-fish generally is particularly liable to excite unpleasant consequences.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

21. *Tracheotomy in Croup.*—Dr. CONWAY EVANS, Assistant Physician to King's College Hospital, read a paper on this subject before the Royal Medical and Chirurgical Society. The author commenced by remarking upon the frequency and fatality of croup as a disease of early life, in illustration of which he observed that out of every thousand deaths of children between the ages of one and ten years which occurred in England and Wales during the year 1856, sixty were due to this malady. He then proceeded to examine into the rate of mortality from croup, and pointed out the very slight measure of success which has hitherto attended the methods of treatment usually employed in this disease. The following cases—four of croup, and two of diphtheria (?)—in which tracheotomy was performed, were then narrated in detail:—

CASE 1.—A boy, aged nine years. Attacked with croup of slow accession; temporary amendment in the symptoms, followed by threatening suffocation; tracheotomy; death four hours after the operation; existence of croupous exudation down to the second and third subdivisions of the bronchi.

CASE 2.—A girl, aged three years. Croup, treated by leeches, counter-irritation, tartar emetic, and calomel; tracheotomy on the fifth day, asphyxia being so complete as to render artificial respiration necessary; ejection of false membrane from trachea, and likewise two casts of small bronchial tubes; after treatment of a freely supporting character; recovery perfect.

CASE 3.—A boy, aged two years. Croup, between two and three days, treated with emetics; tracheotomy on the third day, suffocation being nearly complete; death during the operation; the croupous exudation found after death to extend down to the first subdivision of the bronchi.

CASE 4.—A boy, aged two years and a half. Croup, treated by tartar emetic; suffocation imminent on the fourth day, from the accession of the croupous breathing; tracheotomy; death from exhaustion sixty-five hours after the operation; false membrane found after death to extend down to the fourth subdivisions of the bronchi.

CASE 5.—A boy, aged five years. Diphtheria (?), coming on slowly and insidiously; breathing croupous on the seventh day; treated by emetics, counter-irritation, calomel, and compound antimonial powder; suffocation imminent on the eighth day; tracheotomy, followed by supporting treatment; ejection of a piece of false membrane; sudden accession of severe diarrhœa about thirty-six hours after the operation, and death from exhaustion. No post-mortem examination.

CASE 6.—A boy, aged ten years. Diphtheria, coming on very insidiously during nearly a month; treated by salines, and the application of a solution of

nitrate of silver to the throat; supervention of croupous symptoms, treated by counter-irritation, leeches, antimony, calomel, and chlorate of potash; asphyxia impending; tracheotomy, and stimulating after-treatment; death, apparently from syncope, about twenty-six hours after the operation. After death, a thick false membrane, separable from the subjacent mucous membrane only with considerable force, was found to line the larynx and trachea, and to extend to the bifurcation of the latter; it probably, indeed, passed down into the lungs, but an examination of these organs was not permitted.

Observing that, as in a large proportion of the fatal cases of croup the disease destroys life by asphyxia, the author proceeds to inquire into the reasons why tracheotomy is so rarely resorted to for the relief of this malady in Great Britain, and traces this mainly to the influence of the strong opinions against the operation which have from time to time been pronounced by many great authorities, both British and American, whose views in reference to this point are cited. These opinions the author believes have no valid foundation, and are unworthy of the confidence generally placed in them; and to this conclusion he is led by four classes of considerations, which are examined in detail. These are—1st, the high rate of mortality from croup, both with and without treatment; 2d, the immediate cause of death in a large majority of the fatal cases of the disease—namely, asphyxia; 3d, the recorded cases of croup in which tracheotomy has been resorted to in this country when the patient has been all but suffocated, and in which complete recovery has followed the operation; and 4th, the great success which has attended the performance of tracheotomy in croup in France, in which country it has been extensively practised. If to each of these considerations its fair value be assigned, there can scarcely be any other conclusion but that it is incumbent upon the practitioner to give a fair trial to any method of treatment in croup which promises for its results a lower rate of mortality than obtains under the usual plans, and especially to tracheotomy.

The objects to be gained by the performance of tracheotomy in croup are next pointed out, stress being laid upon the fact that the operation affords time for the disease to run its course (which would frequently not involve the destruction of life, except for the occurrence of asphyxia, which ought really to be regarded as a circumstance in the disease in great measure accidental), and for the administration of such remedies as may be deemed advisable. The physiological effects of the free admission of air into the lungs through an opening in the trachea, in a child undergoing gradual suffocation from croup, are then considered; and the immediate cause of death in those cases in which life terminates by asphyxia is also examined: the practical conclusion arrived at being, that while the symptoms of suffocation may be relieved in almost all cases by the late performance of tracheotomy, they may be prevented in many by recourse being had to that proceeding early in the course of the malady.

The principal objections which have been urged against the performance of tracheotomy in croup are then considered in the following order. Tracheotomy in croup has been objected to—

a. As unnecessary when there is spasmodic closure of the larynx, and as useless when false membrane exists in the windpipe without such spasmodic closure.

b. As useless when the false membrane extends below the point at which the opening into the trachea would be made, and especially when the croupous exudation passes down into the bronchial tubes.

c. As tending in itself to induce bronchitis and pneumonia—diseases which in themselves involve considerable risk to life.

d. As having been actually attended with so little success as practically to render the operation unjustifiable.

e. As very difficult of performance, and as involving in itself great danger to life.

The real value of each of these objections is then carefully and fully examined in the order above given, the answer to the first objection being illustrated by the following case:—

Case 7.—A girl, aged three years; croup treated by the warm bath and by tartar emetic, in spite of which the case progressed from bad to worse until the third day, when, while symptoms of asphyxia were being gradually developed,

and signs of exhaustion were becoming well marked, the patient suddenly fell back in bed and died, with scarcely a struggle. After death, but before the post-mortem examination, tracheotomy was performed. A mass of false membrane was found, almost filling the larynx, and quite occluding the rima, and extending downwards to the third ring of the trachea; but the *lowest* part of the croupous exudation was just *above* the top of the tracheotomy incision. No false membrane existed in any other part of the trachea.

The results of tracheotomy for the removal of foreign bodies from the air-passages are then investigated, as well as those of the performance of this operation for the relief of other maladies than croup. But as the statistical method of examining this subject is believed by the author to be productive of an impression upon the mind of the practical physician by no means so lasting as a narrative of the results of clinical observation, the following cases in which tracheotomy was performed for the relief of other diseases than croup are given in detail:—

CASE 8.—A man, aged forty-three years; came under observation when nearly exhausted from distressed breathing, dependent on syphilitic disease of larynx (probably ulcerative); tracheotomy, followed by a supporting plan of treatment; recovery; but, though able to return to his occupation (a laborious one), unable to breathe without the tracheal tube eight months after the operation.

CASE 9.—A gentleman, aged seventy-two years; nearly asphyxiated from spasmodic closure of the larynx, associated with some disease of that organ (probably of a malignant character); tracheotomy; recovery as regards breathing; but, though living in a state of comparative comfort, unable to breathe without the tube nine months after the operation.

CASE 10.—A man, aged thirty-six years; suffocation impending from œdema of glottis; tracheotomy, followed by a highly supporting plan of treatment; recovery complete and rapid; voice also perfectly restored.

CASE 11.—A girl, aged fifteen years; nearly suffocated from œdema of the larynx, supervening upon chronic disease of that organ associated with "lupus non exedens" of face, lip, and thigh; tracheotomy; recovery, but inability to breathe on the withdrawal of the tracheal tube two months after the operation.

CASE 12.—A lady, aged twenty-eight years; œdema of glottis, supervening upon tubercular disease of the larynx; suffocation imminent; tracheotomy; temporary recovery, the patient continuing to live in a state of comparative ease for five months after the operation, when death resulted from exhaustion consequent on the full development of the pulmonary phthisis.

CASE 13.—A woman, aged twenty-three years; œdema of larynx associated with syphilitic disease of that organ; treated by calomel and opium, in spite of which suffocation became imminent; tracheotomy, followed by supporting treatment; ejection of a complete cast of bronchial ramifications of one lung; recovery complete, except as regards voice.

CASE 14.—A girl, aged nineteen years; sloughing of the soft palate and the back of the pharynx, of syphilitic origin; inability to swallow; supervention of œdema of glottis, and threatening suffocation; tracheotomy, followed by supporting treatment, the patient being fed for several weeks by the stomach tube; recovery complete.

CASE 15.—A boy, aged three years and a half; foreign body in windpipe; tracheotomy, but no foreign body discovered; incisions in trachea enlarged, and windpipe freely examined on several occasions, but without success; eventually, incisions made, not only through several rings of trachea, but also upwards through both the cricoid and the thyroid cartilages, so that a finger could be readily passed from the trachea into the mouth, but still without the detection of any foreign body; ultimate recovery complete, and voice regained.

The conclusion deduced from all these considerations and facts is, that tracheotomy, though frequently a difficult operation, is by no means so dangerous a proceeding as is commonly supposed.

An inquiry is then instituted into the causes of the want of success which has attended the performance of tracheotomy in croup in this country, and this is attributed chiefly to the following circumstances—namely:—

1st. To the fact that tracheotomy has been very rarely indeed resorted to in

croup in Great Britain except as a last resource, when other methods of treatment have been tried and found unavailing, and when the patient has become nearly asphyxiated.

2d. To the fact that the treatment employed prior to the performance of the operation has almost always been of a more or less depressing kind, usually consisting in the exhibition of tartar emetic, ipecacuanha, calomel, the abstraction of blood, the use of the warm bath, &c.

3d. To the fact that the after-treatment has not generally been of that supporting character which nature requires for the due upholding of the patient's strength until the phenomena of croup shall have had time to run their course; and to the difficulty experienced in commanding constant attention in the way of nursing and watching for some days after the performance of the operation.

The author then strongly urges the propriety of having recourse to tracheotomy for the relief of croup early in the course of that disease, and immediately that the existence of false membrane in the windpipe can be satisfactorily determined, and emetics have been fairly tried; and for these reasons:—

a. Because tracheotomy tends to prevent the mode of death by which nearly all fatal cases of croup, in which the operation is not resorted to, terminate—namely, death by asphyxia.

b. Because tracheotomy facilitates the ejection and removal of portions of false membrane from the windpipe.

c. Because tracheotomy tends to prevent the exhaustion due to the extraordinary efforts of breathing almost always made by the patient in this malady.

d. Because tracheotomy, by prolonging life, affords time both for the phenomena of the disease to run their course, and for the administration of remedies and of means of support to an exhausted system.

e. Because tracheotomy facilitates the employment of topical applications to the interior of the windpipe, upon which great reliance is placed by some practitioners.

f. Because the early performance of tracheotomy in France has been attended with results which are admitted, even by the opponents of the operation, to have been far more favourable than when recourse has been had to this procedure as an ultimate expedient.

The physiological and pathological differences between the condition of a child merely asphyxiated by croup, and that of a man half strangled by some mechanical cause, are then pointed out, and the necessity which exists in the former case for the free employment of a supporting plan of treatment is clearly proved.

The cause of death in those cases of croup in which a fatal termination ensues, notwithstanding the performance of tracheotomy, is next examined, and this is shown to depend upon one or more of the following conditions:—

1. On some accidental circumstance connected with the operation, such as hemorrhage into the windpipe, obstruction or undue narrowness of the tube, &c.

2. On asphyxia dependent on the extension of the croupous exudation into the lungs, or on the reformation of the false membrane after its having been once ejected.

3. On complicating diseases (either connected with the operation, or without any reference to it) arising in the course of the croup, such as bronchitis or pneumonia.

4. On exhaustion—death by asthenia.

The author believes that croup, when it proves fatal, always tends to destroy life by exhaustion, and that this would be its ordinary mode of termination were it not that the part of the body in which the most striking alterations of structure induced by malady occur, is one in which the existence of such a mechanical obstruction as is presented by the croupous exudation tends, as well in itself as in the spasmodic closure of the larynx, with which it is often associated, to destroy life by suffocation before the disease has had time, as it were, to run its full course, and produce death by asthenia. And he, therefore, strongly advocates the propriety of adopting a supporting plan of treatment in this malady, both before and after the operation, but especially after its performance. The value of alcohol, as a remedial agent in the treatment of disease, is then exam-

ined, and the method in which it should be given—viz., in small doses at short, but regular, intervals—is pointed out. Alcohol should be regarded, as has been remarked by Dr. Todd, not as a specific remedy, but simply as a kind of food. It is really a hydrocarbon, very easy of digestion, possessing certain properties of enabling the body temporarily to withstand exhausting influences, and capable, by its undergoing oxidation in the system, of maintaining the animal temperature, and of preventing waste of tissue. The *modus operandi* of the remedies usually employed in croup is then discussed, and their real value indicated, and the error of supposing this disease to consist in ordinary inflammation of the windpipe is alluded to; and, while the inefficiency of the remedies commonly used in croup is pointed out to be such as theory would lead us to expect, the same fact is shown practically by the results of experience, which clearly indicate that under all plans of treatment, exclusive of tracheotomy, croup is a very fatal malady. The value of emetics is also examined, and the danger which frequently results from the employment of tartar emetic is dwelt upon.

The circumstances which tend to diminish the chances of success from tracheotomy are then referred to under the following heads:—

a. The age of the patient.
b. The existence of pneumonia or bronchitis.
c. The presence of other diseases, such as measles, hooping-cough, &c.
d. The employment of depressing remedies prior to the operation.
e. The postponement of tracheotomy until the patient is *in extremis*.
f. The extension of the croupous exudation into the lungs.

After suggesting a few practical hints in connection with the operation itself, and in regard to the inhalation of chloroform in these cases, and after briefly glancing at the various points which have been examined in detail, the author thus concludes: It only remains to warn the practitioner against expecting a large share of success from this operation, inasmuch as in our present inability to ascertain whether the croupous exudation is limited to a small portion of the windpipe, or whether it extends into the minute branches of the bronchial tree, we must necessarily oftentimes recommend its performance in cases in which death must almost inevitably take place. But while a careful examination of this subject clearly indicates the propriety of making an opening into the trachea in those cases of croup in which false membrane exists, and of not postponing the operation until the last moment, and while it leads to the anticipation of a decided diminution in the rate of mortality from this disease when the early performance of tracheotomy is extensively practised, the student of science cannot but feel that tracheotomy is at best but an expedient of relief, capable, by its mechanical action, of obviating certain tendencies to death, and, by enabling the administration of support to an exhausted system of affording time for the due occurrence of certain processes necessary to recovery. Nor can the practical physician forget that some effectual remedy for croup has still to be searched for, not to be found in all probability until the true etiology and pathology of the disease are far better understood than at the present day. At the same time it is impossible to foretell how near at hand the day may be when there shall be found a man who will do for croup what Jenner did for smallpox, or when there shall be discovered a remedy for this malady as certain in its power, and as efficacious in its action, as is iodide of potassium in syphilitic periostitis, or as is quinine in ague.

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22. *Incisions in Anthrax.*—MAURICE H. COLLIS, Surgeon to Meath Hospital, says (*Dublin Quarterly Journ. Med. Sciences*, August, 1859) that "the incision into anthrax, whether made early or delayed till sloughing has done part of the surgeon's work, must be deep rather than extensive. Usually it is said anthrax is a flat swelling. The fact of its flatness, or rather of its extent, hides the real amount of elevation, which is, in most cases, considerable. Hence incisions into anthrax seldom go down *through* the inflamed skin and areolar tissue. But even if they did go down to the fascia, they would fail in effect unless they also went through it. The fascia is highly inflamed in anthrax; in fact the essential difference of anthrax from furuncle consists in the inflammation being deeper and implicating the fascia. When fascia is inflamed, much plastic exudation

takes place, both in its substance and under it; and the tendency of anthrax to spread indefinitely is to be thus accounted for. The pent-up plasma, quickly producing pus and slough, can get no vent until there is an adequate opening in the fascia, and this opening should be made by the surgeon as early as possible, if he would avoid the unpleasantness of useless and repeated cutting, and the extensive sloughing which will occur if he neglect to make it. Plastic exudations find great facility in travelling under the fascia, dissecting and destroying its vascular connections, and ultimately causing much of it to perish. This is well known, as a general principle of surgery, and it is strange to find it overlooked as the cause of the spread of anthrax. We readily acknowledge the mischief it does in periostitis, in diffused inflammations of erysipelatous character or connected with paronychia, and in many other analogous cases; but books of surgery are, for the most part, silent about it in the case of anthrax. And yet every one must have observed phenomena which can only be explained by it. The extent and mode of extension of the swelling, the real depth to which the surgeon must cut if he is to do good rather than harm, and the fact of large flakes of fascia ultimately coming away as dead core (in addition to areolar tissue), leaving the underlying muscles bare, must have been often observed, and must often, doubtless, have had their influence on the practical observer; but the junior surgeon and the pupil have not been shown their practical bearing. The rule I have given above, to cut deep rather than wide, is founded on the observation of these facts, and will be found satisfactory, saving the surgeon the opprobrium of cutting twice or oftener without benefit to his patient. It is very easy to know when we are deep enough; by taking hold of the flaps made by our crucial incision, we feel if they are quite loose. Our incision is not deep enough unless we can lift up the point of each flap with ease from the parts underneath. This cannot be done unless our knife has gone through the fascia, and made a crucial incision in it almost as extensive as in the skin. The wounds we have made should be almost as deep at their extremities as in the centre, where they intersect. If we have made our incisions early, before actual sloughing has commenced, as we sometimes, though rarely, have an opportunity of doing, the flaps will curl up if the wound is deep enough, and will leave a widely gaping wound; but if we do not see the anthrax until more or less of the skin is undermined and dead, the gaping of the wound will not be so marked, and the best test is the one I have given above, of lifting the flaps with a forceps, and proving that they are loose. If this rule is followed, we shall have few cases in which we must come and cut again.

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23. *Difficulties attending upon the Treatment of Strictures of the Urethra.*—Mr. Henry Smith, in a recent paper (*Med. Times and Gaz.*, August 13, 1859), called attention to a difficulty in the treatment of stricture of the urethra, which consists in the absence of improvement in the power of passing the urine, although dilatation has been carried on in a satisfactory manner. "This is a difficulty," he remarks, "which is exceedingly annoying and distressing, because, in the first place, the patient naturally expects that relief will be given so soon as an instrument of at least a moderate size can be introduced into the urethra, and the surgeon knows that he has to deal with a feature in the complaint which may depend upon circumstances over which he has little control, and which will render the treatment of the case more troublesome. Mere density or tightness in a stricture acting as a bar to progressive dilatation, is a condition much less likely to hinder a satisfactory termination than the one alluded to; for in the one case, although the dilatation may advance but slowly, the improvement in the stream of urine is generally commensurate with the mechanical progress, and satisfactory both to patient and attendant, while in the other it will happen that the exercise of the utmost skill and endurance is but faintly rewarded.

"Next to extreme irritability of the urethra, this one feature of absence of improvement in the stream, has been a source of greater difficulty and annoyance than anything else. Among a considerable number of very severe cases of stricture which have lately been under my care, my attention has therefore been much directed towards ascertaining its cause, and removing the symptom, if it may be so termed. In some cases it has not been difficult to account for it,

as where one or more fistulous sinuses exist; when such is the case the bladder may be healthy and the urethra be fairly dilated, yet the patent condition of the artificial openings, which take so long to close, allows the greater portion of the urine to percolate through them, little comes through the urethra, and that little in any volume. In instances of this kind the patients may be assured that the stream of urine will increase as the sinuses close up, slowly as that event is too often known to take place.

"There are, however, other cases of severe stricture, uncomplicated with fistulous openings in the perineum, where the surgeon has been able to carry on dilatation in a satisfactory manner, and to such an extent that a good-sized catheter may pass, and yet there is either no improvement at all in the stream, or, if any, it is so slight as to be almost inappreciable. This obtains also not only in instances of stricture in persons of advanced age and of debilitated power, but it is occasionally met with in patients either in the very prime of life, or in those not much above adult age. It is in some of these latter cases that it is extremely difficult to understand the meaning of this symptom. It is considered by some men of large experience that it is the bladder alone which is in fault; that it has become weakened and dilated by the persistence of the obstruction in front; and that, even when this latter has been removed, the viscus does not recover its tone sufficiently to expel its contents in an effectual manner. That this is the true solution of the question in some instances there cannot be much doubt; but I am induced, by careful observation, to believe that in a considerable number of these cases the loss of power in the bladder is more apparent than real, and that the impediment to the volume and flow of the urine is in the urethra itself, notwithstanding that dilatation has been carried on to a measure with which the passing of urine in a small stream, or in drops even, seems almost incompatible. I have noticed that this very distressing feature has existed both in instances where the stricture has been exceedingly difficult to penetrate, the canal not being especially irritable, and in those cases where there has not been very much difficulty in overcoming the obstruction; but the urethra has been extremely sensitive. I have, moreover, noticed, especially in the latter cases, that more than a single stricture has existed; that there has been one near the meatus, or one or two inches from it; and as a rule, with but rare exceptions, the anterior stricture or strictures have been found to be most irritable and unyielding.

"In such instances as these it is extremely difficult to overcome the irritable condition of the urethra, and to dilate the canal; and then, after this has been accomplished to such an extent that a No. 8 or 9 catheter is introduced, there is the mortifying result of little or no increase in the stream of urine, or even of a diminution in size. Now, I believe that in such instances, especially where the patients are young or the stricture has not lasted long, the fault is not in the bladder, but that that organ expels the urine with its wonted power, and that the fluid coming in contact with the irritable portion of the canal—although it has been dilated to the extent mentioned—causes it to contract forcibly, and thus produce the fine stream observed. Careful examination of the urine in these cases shows absence of any disease of the bladder; and moreover, it will be seen that, small as the stream is, it is expelled with considerable force and continuously; which circumstance will not be produced, I apprehend, by the mere action of the urethral muscular fibres, whether voluntary or involuntary. In a very well marked case of simple loss of power in the bladder lately under my care, in the person of a very fine young officer, all the symptoms of stricture were present; but there was hardly any impulse at all given to the urine as it was being evacuated, and the patient was compelled to strain violently. There was not the least obstruction in the urethra itself, and by well emptying the bladder artificially, and by attention to the general health, this viscus gradually regained its tone, as evidenced by the increasing size and force of the stream.

"In the treatment of the cases I have been considering, much patience is required, both on the part of the surgeon and the sufferer; for, as I have before stated, the latter is too apt to be greatly disappointed at the little improvement which is perceptible, and in his distress is too liable to be misled into undergoing some heroic treatment which may either destroy his life, or give relief

merely for a brief period. It is only by the continuous dilatation of the diseased canal to as great an extent as it will admit of, that the result so much desired will be obtained. If the patient is not advanced in years, or has not had stricture for a long time, he may be assured that a persistence in the treatment will be attended with satisfactory results; sometimes the desired relief will happen suddenly, at other times, and most frequently, the increase in the power of urinating will be only gradual, but will not be marked until an instrument of considerable size has been introduced. When, however, the features of the case indicate that the want of stream is due to a loss of power in the bladder, a long time elapses before the organ recovers itself, although the urethra has been well dilated by the surgeon, and is kept patent by the sufferer himself. It is especially important in these cases to attend to the general health; for it will not unfrequently be found that this has suffered much, and that the loss of power in the bladder is but a symptom as it were of constitutional debility, rather than the mere result of an obstructed urethra."

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24. *Perineal Section for Cure of Stricture of the Urethra.*—Mr. Henry Smith states (*London Med. Times and Gaz.*, August 13) that "about a fortnight since I had in my house, on the same morning, two unfortunate gentlemen, in the prime of life, who had undergone the perineal section; one, five years since, at the hands of a London surgeon of large experience; the other, three years previously, had been cut by Mr. Syme himself in Edinburgh. They were both in a wretched condition, the one had his perineum riddled with three fistulous openings; but as Mr. Syme himself was not the operator here, the proceeding was of course unskilfully and improperly done, and I will say no more about it. The other case, however, was treated by Mr. Syme himself, and the operation was of necessity done according to the rules laid down by that surgeon. Yet, where is the complete remedy? The unfortunate gentleman assured me that before he left Mr. Syme's care after the operation, he felt the stricture returning, and that notwithstanding he persisted in passing the instrument every fortnight, as he was told to do, the canal contracted, so that he was unable at the expiration of ten months to pass anything at all. Since then he has been roaming about from one surgeon to another, in the hope of getting his stricture dilated. When he first consulted me some six weeks since, I could only with the greatest perseverance succeed in introducing a small No. 4 catheter, although a distinguished surgeon in Dublin had introduced a No. 8 only a fortnight previous. There was no fistulous opening left here, as in the other; but there is the irritability and contractility of the urethra as before, although Mr. Syme performed the operation himself, and according to the information given to me by the patient, assured him it would be a certain cure. I have before enunciated the opinion that not only does this operation not prevent the return of the stricture, but that the recontraction becomes more severe than before. As I had not the opportunity of seeing this gentleman before he was cut, I cannot positively state whether this holds good here or not; but that the induration still remained, or had reformed at the site of the old disease, was quite evident by running the finger along the perineum. Cutting cannot possibly get rid of this; and so long as this remains, the stricture will persist."

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25. *Operations for Stone in Women.*—The *Med. Times and Gazette* (July 23d, 1859) contains a summary of 24 cases of operations for stone in women. Of these, 16 occurred in the practice of Metropolitan Hospitals, and 8 in that of Provincial institutions. Of the whole, 22 cases resulted in recovery, and in 2 the patients died. In both the cases which ended fatally the patients were adults, who had suffered from stone from early childhood, who were worn out by the irritation, etc., produced, and in whom the stone was of very large size.

Age at which stone is most frequent in females.—In employing our series of cases to determine the age at which vesical calculus most frequently occurs in the female sex, 5 cases (Nos. 3, 8, 16, 18, and 19) must be excepted. In two of those the concretion had formed on hair-pins intentionally introduced into the urethra, and in the others it was consequent on certain injuries to the vagina to which the adult only is exposed. Taking, then, the remaining 19 cases as our

basis, we find a remarkably close correspondence between females and males, in the period of life most liable to idiopathic vesical calculus. In 6 of the cases, the patient was under ten years of age; in 4 between ten and twenty-five; in 5 between twenty-five and forty-five; and in 4 between forty and sixty. The proportion of cases in which children are the subjects of stone, would be increased if we were to count as such the subjects of cases 17 and 22, in whom symptoms had existed from early childhood, although they were not operated upon till adult age. Probably one or two other of the adult cases ought, in like manner, to be counted with the children, if their real history were known. The facility afforded by the female urethra for the escape of small calculi, which, if allowed to remain would have constituted the nuclei of larger ones, is the reason usually assigned for the comparative rarity of cases requiring surgical relief. For anything which can be adduced in proof of the contrary it is a correct explanation, since we have no reason for thinking that the remote causes of calculous affections obtain less commonly in females than in males. It is interesting, however, to note that this exemption from large calculi is afforded impartially to the different periods of life, and that, consequently, the residuary cases afford the same proportionate numbers of the different ages that the whole group itself did. In our analysis of 186 lithotomy operations in males, which we gave in this journal for January 8, 1859, 109 were under ten; 36 between ten and twenty-five; 8 between twenty-five and forty-five; 33 between forty-five and seventy-five. These relative members correspond as closely as can be expected with those given above, and show that the ages at which stone in the bladder is most frequent are pretty nearly the same in the two sexes.

Fatality of operations for stone in the female.—We are not aware that any statistical data have as yet been collected respecting the proportion of deaths which occur after the removal of stone from the female bladder. The list before us gives two deaths to twenty-four cases, or one in twelve. This rate of mortality is, we fear, not at all above the true average. During the past six months (not included in our statistical period) another death has occurred in a woman operated on in one of the London hospitals, and we are acquainted with the details of a fourth which happened in a Provincial institution about six years ago, and just prior to our first publication of statistics. Regard being had to the very simple nature of the operation, a mortality rate of one in twelve must be considered as high. It is not, however, so much the nature of the operation itself as the antecedent state of the patient which influences the lithotomy death-rate both in males and females. In speaking of the causes of deaths in males, we had to point out that it was in the cases which had been long neglected—in which the bladder, and, above all, the kidneys had become diseased—that the deaths chiefly took place. The same remark applies to the series now before us. The two women who died were both adults, who had suffered from stone since childhood. They were both in worn down health, and had very large calculi. In one of them an autopsy proved that most extensive renal disease existed. As regards the operation, the death was undoubtedly a *post hoc*, but only in a very limited sense a *propter hoc*.

Different modes of operating.—In respect to the directions in which incisions should be made, and as to how dilatation should be conducted, very various indeed have been the procedures recommended for the removal of calculi from the female bladder. Lithotomy, properly so called, that is, cutting into the bladder without dividing the meatus, has, however, been pretty much abandoned, and is now scarcely thought of in English practice. The only difference of opinion respecting the use of the bistoury, which now obtains, is as to the direction in which the meatus should be divided; some preferring, with Colot (1727), to cut directly upwards; others, with Chelius, to divide the urethra downwards into the vagina; and others, with Dionis (1716), to make an oblique incision in each side. Sir B. Brodie has advocated the first of these, and Mr. Liston always adopted the last. A modification of the last was adopted by Mr. Hilton, in Guy's Hospital, in Case 3, which, considering the large size of the stone, and the bad health of the patient, was remarkable in its perfect success. Mr. Hilton adopts the plan of retaining a small catheter in the bladder, and of supporting the floor of the urethra—which had been, as it were, let down by the lateral

incisions—by means of sponge placed in the vagina. With regard to dilatation, it seems generally admitted, that it is best effected by a valve dilator, more or less closely resembling that bearing Mr. Weiss's name. Practically, we may classify operations for the removal of calculi in females under the heads of Lithectasy, or dilatation only, Urethral Lithotomy, and Lithotrity. The appended table shows the proportion of cases, in which each of these were respectively adopted in the series before us, and also indicates the results obtained as regards recovery and control over the bladder.

Nature of Operation.	Number of Cases.	Died.	Recovered.	Had incontinence of urine.
Lithectasy.—Extraction of the stone whole without incisions . . .	7	None.	7	None.
Lithotomy A.—Extraction of the stone whole after limited incisions . .	3	None.	3	None.
Lithotomy B.—Extraction of the stone whole after free incisions . .	8	2	6	5
Lithotrity.—The stone crushed, and either removed piecemeal at the time, or left to escape spontaneously	4	None.	4	None.

Incontinence of urine as a result.—Dionis candidly informs us that three-fourths of the women on whom he operated for stone remained afterwards affected with incontinence of urine. This was in 1716, and before the practice of lithotrity; his favourite operation being by double lateral incisions. He considered that incontinence could scarcely be avoided if the stone were large. Mr. Coulson,[1] in allusion to it, also writes, "This is the great objection to nearly all the methods adopted for the extraction of calculi from the female bladder. A considerable proportion of those operated on labour ever afterwards under the distressing accident of incontinence of urine." With these statements before us, the results of modern hospital practice, as shown in the above list, are certainly good. Out of the twenty-two[2] patients who by different methods were rid of vesical concretions, two died, and of the remainder only six suffered afterwards from any degree of incontinence of urine. We might fairly claim to omit three of the other cases, inasmuch as in them unusual complications existed which altered the nature of the operation, and hindered the perfection of its result. In two of them hair-pins were present, and in the other the bladder had been injured by a fragment of impacted glass. Leaving these out of view, then, we have nineteen instances of the extraction of stone under ordinary circumstances, and of these only three suffered afterwards from incontinence. As explanatory of this satisfactory result, we must allege the greater frequency with which lithotrity is now adopted, and the increased caution as to the practice of incisions. Excepting where the dimensions of the stone calculus are known to be unusually great, the surgeon now never thinks of commencing his operation by incisions, as used formerly to be the case with many operators. He pursues the far better plan of ascertaining, in the first instance, whether the stone will not pass after moderate dilatation of the passages, and, on finding that it will not, then proceeds either to crush or to make such limited notches in the urethra as are absolutely necessary. Instead of dividing ourselves into the advocates of dilatation and those of incisions respectively, we are now content to adapt special measures to each individual case, without laying down invariable rules. Every one admits that the moderate dilatation needed for the extraction of small stones is attended with almost no risk as to incontinence, and that in such cases incisions should never be thought of. After incisions to however small an extent, and after dilatation when immoderate in extent, it is equally generally admitted

[1] Diseases of the Bladder, page 539.

[2] Cases 8 and 20 are omitted from the above list for reasons which will be obvious to the reader.

that the risk of this accident is considerable. Which of the two has the less of risk it is difficult to say positively, but probably the balance of evidence is somewhat to the advantage of incisions. But let us ask, why should either be resorted to? Why not in all cases of large stones in females employ the lithotrite? There may be a few very exceptional cases in which the very large size of the stone and the worn out health of the patient (as in case 17 in our list) render lithotrity inadmissible, but even as regards them, the result of incision treatment is not encouraging, and they are besides very rare. In all others, however, in those, for instance, in which the stone is neither too large nor too hard to be crushed, we can see no good reason whatever, why a patient should be subjected wilfully to the risks of incontinence, which undoubtedly attend both immoderate dilatation, and the employment of incisions, whilst we have such an instrument as the lithotrite. Lithotrity in the female is, from obvious anatomical considerations, simple and easy. As far as we are aware, its general results have been most satisfactory. As seen above in the cases before us, it was adopted four times, and in all the instances the patients recovered without any remaining incontinence.

Proportionate frequency of stone in the two sexes.—It has been generally believed that about one female comes under surgical care for stone in the bladder to every twenty males. This, at least, is the conclusion come to by Mr. Coulson, in his work on "Diseases of the Bladder," after citing data from various authorities upon the subject. In other words, about five per cent. of our stone patients are females. This result appears to agree very closely with what has occurred in our English hospitals during the period which our statistical reports comprise.

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26. *The Reparative Process in Human Tendons after Subcutaneous Division for the Cure of Deformities.*—W. ADAMS, Esq., read before the Royal Medical and Chirurgical Society (June 28) a paper on this subject, illustrated by a series of specimens and drawings from fifteen post-mortem examinations. Specimens of reunited tendons after division were exhibited from ten cases, and also drawings, made by Ford, of the recent appearances in thirteen cases, at periods between four days and three years after the operations. These specimens had been collected by Mr. Adams during the last eight years, and were principally from patients operated upon at the Royal Orthopædic Hospital; but for two specimens he was indebted to Mr. Erichsen and Mr. Curling. After alluding to our at present scanty information on this subject, and describing the recent appearances in fifteen cases, the author gave a general summary of the reparative process, describing—1st. The immediate results of the operation. 2dly. The commencement and nature of the reparative process. 3dly. The general appearance and structure of the newly-formed connective tissue, or new tendon. And 4thly. The junction of the new with the old tendon. This was followed by an account of the circumstances which may interfere with the perfection of the reparative process, or entirely prevent it, so that non-union of the divided tendon may result. Complete failure of union had been witnessed by the author only in the posterior tibial tendon, but it appeared that there is considerable risk of such an occurrence whenever tendons are divided in or near to dense tubular sheaths. It was shown that imperfect union might result either from some constitutional defect in the reparative powers of the patient, or from injudicious after-treatment in a variety of ways, but principally from too early and too rapid mechanical extension. The conclusions which the author considered to be established by the above series of cases were arranged under nine different heads. It was stated that tendon is one of the few structures of the body capable of reproduction or regeneration, and that the newly-formed tissue acquires within a few months of its formation the structural characters of the old tendon so perfectly, as that, under the microscope, it is with difficulty distinguishable from it; but it does not acquire through its substance the uniformly opaque, pearly lustre of old tendon; in the mass it retains a grayish translucent appearance, so that the recent section affords an easy method of distinguishing the new from the old tendon. The greatest length of perfectly formed new tendon which the author had seen was two inches and a quarter, and this was in the

tendo-Achillis of an adult, a year and a half after it had been divided by Mr. Curling. That the process by which new tendon is formed is essentially similar in animals and in man; that the perfection of the reparative process is in direct proportion to the absence of extravasated blood and inflammatory exudation; and that the sheath of the tendons, when consisting of bone-textured areolar tissue, as in the tendo-Achillis and other tendons surrounded by soft tissues, is of importance—1st. In preserving a connection between the divided extremities of the tendon. 2dly. In furnishing the matrix in which the nucleated blastematous, or proper reparative material, is effused. 3dly. In giving definition and form to the newly-developed tendinous tissue. That the new tendon always remains as a permanent tissue, and as an integral portion of the tendon, the divided extremities of which it has been formed to reunite. In the specimen exhibited, in which Mr. Adams had divided the tendo-Achillis three years previous to death, an inch and a quarter of new tendon was clearly traceable. The average length of new tendon formed in children to reunite the divided extremities of the tendo-Achillis, Mr. Adams considers to be from half an inch to an inch, and in adults from one to two inches. The author considered the facts adduced in this paper were amply sufficient to disprove the linear-cicatrix theory—the theory at present in vogue, and supported by all his colleagues—which assumes that the newly-formed tendinous structure has a disposition to undergo a process of gradual contraction, such as we see taking place in the cicatrices of the skin after burns, to which it has been compared, and that ultimately it becomes absorbed, the muscular structure at the same time becoming elongated by the force of the contraction of the cicatrix, so as to allow of the reapproximation of the ends of the divided tendons, and the formation of a linear-cicatrix. From the present observations it appeared that in the cure of deformities, muscles are elongated by the increased length of their tendons, obtained by means of subcutaneous division, and the development of new tendon formed for the purpose of reuniting the divided extremities of the old tendon. The mechanical and physiological effects of this increased length of the tendons were described; and lastly, the author stated that when recontraction of the foot takes place, and the deformity returns at a distant period after tenotomy, this does not depend upon absorption of the new material, or new tendinous tissue formed previously to unite the divided extremities of the old tendon, but upon structural alterations taking place in the muscular tissue. In three cases of relapsed deformity of the foot examined by the author, the new tendinous tissue formed after the previous operations remained, and could be easily distinguished from the old tendon. These facts were regarded as additional evidence against the linear-cicatrix theory.—*Med. Times and Gaz.*, July 30, 1859.

OPHTHALMOLOGY.

27. *Acute Pain of Glaucoma removed by Operation.*—Mr. Haynes Walton relates (*Med. Times and Gaz.*, July 16, 1859) the following case:—

"A female, in middle age, was sent to me in private by Mr. Wall, of Paddington, with acute glaucoma of the left eye, which was very tense, much injected, the pupil dilated, and the iris pressed forwards by the semi-opaque lens. Vision was quite lost; and I was consulted solely on account of the severe suffering, sometimes lasting for several consecutive hours, but more generally in paroxysms, which nothing has been able to subdue. The extreme vascularity of the eyeball, and the general plethora, induced me to order cupping to the temple, and purgatives. Not the slightest benefit ensued. Opiates, both locally and generally, were then tried, with no more effect than securing better nights' rest than hitherto, but the general health was deranged by the narcotics, which were discontinued. Other drugs were administered in vain. Thus, after a period of five months, the patient got no material benefit either from myself or from any other surgeon by whom she had been treated, and she had applied to several

She expressed her desire to submit to any operation likely to afford relief, and she was the more anxious as the right eye was certainly sympathetically affected, as manifested by intolerance to light and lachrymation. Rather than extirpate the eyeball, a practice that my patient had heard of, and which is certainly very objectionable if it can be avoided, or rather than reduce it by the removal of the anterior portion, an operation that is very serviceable in checking certain morbid actions, and which should when applicable be preferred to the above, I determined to try the experiment of extracting the opaque lens, and evacuating some of the vitreous humour. I effected this without wounding the iris. The vitreous humour was apparently quite normal.

"The acute pain ceased, and there was less uneasiness during the healing process, which was quickly effected, than is often experienced in successful operations for the extraction of the cataract. It is just five weeks since I operated. There has been no recurrence of pain; there is yet conjunctival vascularity; there is no other abnormal appearance about the eye, except that the pupil is irregular, a part of it being adherent to the corneal wound, but there is no prolapse. The right eye has lost the sympathetic irritation.

"I desire not to set more value on a single example like the present than it is worth, nor do I attempt to generalize from a single instance; but even as a unit, as an isolated fact, it has its value. It will encourage me to investigate the matter further, and I doubt not that with this publicity the subject will receive attention from others. I shall not attempt to explain the rationale of the operation, nor do I venture to speculate on any advantages that may be gained by this means when adopted in the earlier stage of the disease. My object is to record an experimental success in the removal, by a simple plan, of a distressing symptom that will not at all times succumb to any ordinary treatment, except that which mutilates or disfigures. I can affirm, from personal experience, that Græfe's iridectomy does fail in these instances.

"The tendency to internal hemorrhage, when a diseased eyeball is incised, is well known; and I adopted the generally successful preventive of applying a pledget of cotton wool and a bandage over the eye, and retaining it two or three days. No bleeding occurred."

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28. *Cancerous Ulceration close to the Inner Canthus, treated with Sulphate of Zinc Paste.* Dr. WILLIAM MACKENZIE, of Glasgow, relates (*Ophthalmic Hospital Reports*, April, 1859), the following very interesting and instructive case. A patient, aged apparently about fifty-five, and who attributed the spread, if not the origin, of his complaint, to the depression of mind arising from pecuniary loss, applied to me on the 1st of February, 1859, on account of a cancerous ulcer on the side of the nose, close to the inner angle of his left eye. It was fully the size of a fourpenny piece, of irregular shape, covered with a scab, and surrounded by hard and elevated edges. The papillæ and caruncule lacrymales, and the palpebral conjunctiva were inflamed, and the disease seemed to be extending in the direction of these structures.

I felt no doubt that were the ulcer left to itself it would gradually spread, and prove rebellious to all applications of a soothing description. Having repeatedly found, also, that extirpation of such a disease by the knife, even when care was taken to cut into the sound integuments, although followed by a firm cicatrice and an apparent cure, was succeeded after a time by a renewal of the scirrhous hardness and intractable ulceration, I determined in this case to try as an escharotic the sulphate of zinc, as recommended by Dr. Simpson, of Edinburgh. I was partly led to this course, too, by observing that I could not extirpate the diseased part without removing the lower papilla lacrymalis.

Having driven off by heat the water of crystallization of a few grains of the sulphate of zinc, and reduced the residuum to a fine powder, I mixed it with a little glycerine, so as to form a thick tenacious paste. Taking a little of this on the point of a bit of stick, I applied it over the scab and over the hard edges of the ulcer, and covered the part with dry lint.

Next day, I found that the application had given very little uneasiness; but that it had acted in destroying almost entirely the hard edges of the sore, and left the whole of its surface free from scab and of a florid healthy colour.

Two or three times subsequently I covered the edges again with the zinc paste; after which I left the wound to cicatrize, under the application of dry lint. I touched the conjunctiva and papillæ lacrymales occasionally with the four grains' solution of nitrate of silver, under which application they speedily freed themselves of inflammation.

On the 24th March, the patient called on me, with a firm cicatrice, of a healthy hue, in the site of his former disease.

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29. *Treatment of Obstinate Granular Ophthalmia by the Local Application of a Solution of Chromic Acid.*—Dr. HAIRION recommends a solution consisting of equal parts of chromic acid and distilled water as a useful application to granular lids. It is applied by means of a camel's hair pencil, and is, he says, neither very painful nor followed by any great amount of reaction. Of fourteen cases treated by it, in eleven the result was satisfactory. The cauterizations were made at intervals of four, six, or eight days, and the time occupied in the cure was from four weeks to four months. Considerable prudence is required in the adoption of his mode of treatment, which is only recommended in obstinate cases.—*Archiv. Belge de Med. Milit.*, Sept. 1858.

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30. *Secale Cornutum in Disturbance of the Accommodation-power of the Eyes.*—When local hyperæmia is dependent upon a laxity of the walls of the bloodvessels, advantage attends, Professor WILLEBRAND, of Helsingfors, states, the employment of secale cornutum. He was induced to use it in these cases by the expectation that a means which acts so specifically upon the unstriped uterine muscular fibre must excite some power over the analogous structure of the arteries, and which its hæmostatic action proves, in fact, that it does. During his investigations he soon became struck with the fact that the heart of persons employing it soon underwent contraction in all its dimensions, and that even within the first twenty-four hours—a circumstance which he has frequently verified since. The first case that came under his care was an example of exophthalmos, accompanied with enlargement of the thyroid gland and hypertrophy of the heart. After a few weeks' use of the secale, the hypertrophy of the heart and thyroid, as well as the projection of the eye, much diminished. The patient, however, left off the medicine, and the exophthalmos returned worse than ever. Since that period he has employed the secale in various cases in which increasing contractility of the muscles of the bloodvessels or other tissues seemed to be indicated. It was found of especial advantage in a disturbed state of the accommodation-power of the eye, especially induced by over-taxing the organ on small objects with an insufficient amount of light. Children from some of the schools have furnished the author with many instances, and they have always been relieved by the secale. He relates a case in which impaired vision was always brought on by sewing or reading, and wherein the signs of some amount of chronic congestion were visible. Relief rapidly followed, and when the affection recurred some months after, it was as speedily relieved. He has also found the secale of great use in several cases of acute or chronic inflammation of the eye, and especially in blepharitis and the pustular conjunctivitis of children, the case proving much more rapid, and relapse being much less rare, than when local means alone are relied upon. No benefit has been derived from it in granular conjunctivitis and trachoma.

Proceeding upon the theory of its stimulant action upon the vaso-motoric nerves, the author has extended the employment of the secale to other local disturbances of the economy; and, as already observed, he has had frequent occasions of observing its transitory influence in hypertrophy of the heart, without having any reason to believe that it is of any permanent utility in affections of this organ, the heart always returning to its former size soon after the use of the secale has ceased. In many cases of both chronic and acute hyperæmia it has proved of great service, and especially in cases of galactorrhœa, and in indurations, tumefactions, and catarrhal affections of the uterus. Also, it has been very useful in enlarged spleen from intermittent fever, and when large doses of quinine have failed. It is especially indicated in the cases of relapsing intermittent depending upon enlarged spleen. In erysipelatous affections, it has often

done good service applied externally as a cataplasm. The author formerly gave ten grains ter die, but now gives but five, combining it with magnesia, or, when chlorosis is present, with iron.—*Brit. and For. Med.-Chir. Rev.*, July, 1859, from Graefe's *Archiv. für Ophthalmologie*, B. 4, Ath. 1, s. 341.

MIDWIFERY.

31. *Placenta Prævia.*—Dr. DILL read before the Belfast Clinical and Pathological Society (Feb. 26th, 1859) a paper on this subject, in which he maintains that turning, if performed judiciously and at the proper time, affords the best chance for preserving the lives of both mother and child, and relates the following cases in confirmation of this opinion:—

CASE I.—Mrs. C., aged 30, April 21st, 1858. Mr. J. called me to see this patient, who was far advanced in pregnancy, and had been attacked with profuse uterine hemorrhage once or twice during the eighth month, and now, again, towards the close of the ninth. The placenta was felt adhering at the neck of the uterus; the os was about the size of a crown piece, and dilatable. The woman was weak, but there were symptoms of a living child. She was put under the influence of chloroform. I introduced the left hand, the os easily yielded, passed onward, punctured the membrane, got hold of one foot, turned, and delivered her, in the usual way, of a living child. The placenta very soon followed; the hemorrhage ceased; the woman did well; the child died within a week.

CASE II.—In June, 1858, I was called, by Drs. S. and J., to a woman residing in Fourth Street, who had been attacked with profuse hemorrhage at the close of the ninth month of pregnancy. She had been ill for nearly two days when I saw her. The edge of the placenta was protruding through the mouth of the womb. The waters had been discharged some hours. The woman was weak, and life in the fœtus could not be detected. It was agreed that turning was the proper course. Dr. J. introduced his hand, got hold of a foot, turned, after some difficulty, and brought away a dead child. Marshall Hall's plan of treatment was vigorously instituted, but without effect. The mother did well till the tenth day, when she died, but as I did not see her after being delivered, I cannot state the particulars.

CASE III.—Mrs. M. was brought into the Lying-in Hospital in a very weak and exhausted state from hemorrhage, about the full period of gestation. The placenta presented. Dr. Pirrie, whose patient she was, finding the os but slightly dilated and rigid, thought it better to introduce the "tampon." It remained in for four hours, during which time the pains had increased. The "tampon" was removed. The os was found to be farther dilated. She was placed under chloroform. Dr. Pirrie introduced the hand, turned, and delivered; the child was dead; the woman made a good recovery.

CASE IV.—On the 10th of September, 1858, Mrs. F., aged 33, took ill of flooding at 5 o'clock A. M. I was with her at 6 o'clock. She had completed the sixth month of pregnancy. She had lost a good deal of blood, and the discharge was continuing. The placenta presented; os, size of half a crown and rigid. I introduced the "tampon," applied cold, and admitted cool fresh air into the room. Mrs. F. was a delicate woman, and she had become rather weak. I was soon afforded the assistance of Dr. P., when we agreed to administer chloroform and deliver. I introduced the right hand into the vagina; found the os more yielding, so much so as to enable me to introduce two fingers; found it to be a cross birth; hooked one of my fingers into the groin of the fœtus, and soon brought it away; being premature, the fœtus was, of course, dead, but the mother made an excellent recovery.

CASE V.—On the 12th of July, 1858, at two o'clock A. M., I was sent for by Mr. Moore, resident pupil in the Belfast General Hospital, to see Mrs. L., whom he had brought into the house the night before. She had now reached the full

period of pregnancy, and during the last three months she had been attacked frequently with profuse hemorrhage. I found her very weak; pulse nearly gone. On examination, discovered a complete placental presentation. The hemorrhage continued. The child was found to be alive; but both mother and child were in extreme danger. She was placed under chloroform. I introduced my left hand, separated the posterior edge of the placenta from the uterus; passed onward; punctured the membranes, got hold of the child's foot, turned, and brought away a living child. Although the mother had a severe attack of puerperal fever, both she and the baby did well.

I was present when a member of this Society, in a case of placenta prævia, turned. His patient did well; but as I was only in the room, and did not make an examination, I am not in a position to say more.

I would conclude by stating that I know of no case in which the use of chloroform is more indicated, and in which the good results arising from it are so apparent, than when turning is practiced.

Lastly, Dr. Simpson's statistics show that where turning is practised, there is a mortality of one in three and a half, and consequently argues against it; whereas, I have brought under the notice of this Society six cases in which turning was the practice, and in some of them under very unpromising circumstances, with only one death, and which, I believe, was not to be ascribed to the operation. I may add, that in this case, at her own request, chloroform was not administered.—*Dublin Hospital Gazette*, July 15th, 1859.

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32. *Placenta Prævia.—Air-Pessary used to plug and dilate the Os Uteri.* Mr. J. J. Murray relates (*Med. Times and Gaz.*, June 11th, 1859), the following interesting case:—

"On April 16th, 1859, Mr. Picard requested me to visit Mrs. M. A., aged 29, who had previously been four times delivered at the full term, twice at the sixth month, and once at the seventh month. She was now in the seventh month of utero-gestation. Nine weeks previously profuse hemorrhage from the vagina had come on suddenly while she was resting on her return from a walk. Cold applications and rest were enjoined by her friends, but the bleeding did not entirely cease till eight hours afterwards. Four days later the hemorrhage had recurred, and she lost a large quantity of florid blood. Since this time, three days had never passed without bleeding, which was invariably aggravated by exertion, and she had therefore avoided all active movements.

"During the night of April 15, labour-pains had set in, accompanied by great loss of blood, and Mr. Picard had properly judged it expedient to plug the vagina. After this only slight dribbling hemorrhage had occurred; but the patient had fainted repeatedly, and her friends were now much alarmed.

"When I first saw the patient on the evening of April 16, the skin was cold, the pulse weak and rapid, and the lips extremely blanched. Labour-pains were recurring at regular intervals of ten or fifteen minutes, each pain accompanied by hemorrhage. On examination, the os uteri was found to be little more than the size of a shilling, its margins thick and firm. The tip of the finger encountered the spongy placental substance overlying the patulous os. Sweeping the finger round the external surface of the placenta, I broke down its uterine adhesions within an inch and a half of the margin of the os uteri; and, detecting the membranes towards the right side, I at the same time evacuated the liquor amnii. During an hour there was very little bleeding; but at the expiration of this period, another gush of blood accompanied a pain. On examination, it was found that the os uteri was still insufficiently dilated to admit two fingers. Alarming syncope occurred; and though the patient was plied with diffusible stimulants, she did not rally for some minutes. It was evident that her only safety lay in speedy delivery. With the double object of controlling the hemorrhage and dilating the os uteri, I now introduced a flattened caoutchouc air-pessary between the wall of the uterus and the presenting surface of the placenta; and, retaining the pessary in its place by the tip of the finger, I cautiously inflated it by means of the attached syringe. A portion of the surface of the expanded pessary could be felt closely opposed to the margin of the os uteri. During thirty minutes no bleeding ensued. Then the pains became

more powerful, and blood began to trickle over the thigh of the patient, who lay on her left side. More air was pumped into the pessary, and with its increased dilatation all hemorrhages ceased. From time to time we had demonstration of the value of the air-pessary as a plug; for whenever the trickling of blood recurred, it was effectually checked by further dilatation of the pessary by a few strokes of the syringe. About two hours after the first introduction of the pessary, the os uteri was ascertained to be nearly the size of the rim of a wineglass; and the air was permitted to escape from the now considerably inflated pessary, which then quickly collapsed, and was withdrawn. During a gush of hemorrhage which ensued, the hand was introduced, and the shoulder being found to present, the feet were seized, and the fœtus extracted. The placenta was immediately detached and removed, and the uterus became firmly contracted.

"From its unusually large size, the placenta must have extended over the greater portion of the internal surface of the uterus. Over the edges of a portion of the uterine surface of the placenta, there was a thin indurated crescentic layer of decolorized coagulum, four inches in length. This coagulum had probably been formed after the first onsets of hemorrhage, nine weeks previous to delivery.

"The lochia were somewhat more copious than usual; but the patient recovered without a bad symptom."

Mr. M. expresses the conviction that "in cases of uterine hemorrhage in which direct plugging and dilatation of the os uteri may be deemed improper, I believe the inflatable caoutchouc bag used as a vaginal plug, will be found to possess advantages over the tampon of sponge, cotton, or tow; for,—

"1. The material of the caoutchouc bag does not absorb; and it therefore acts more immediately and more efficiently in arresting hemorrhages than such substances as sponge, linen, cotton, or tow.

"2. When uninflated the bag is small in bulk, and its introduction is therefore easy and painless.

"3. When inflated to the requisite extent, it adapts itself to the surface with which it is brought into contact.

"4. Whenever it is desirable to ascertain the condition of the os uteri, the air may be permitted to escape from the inflated bag, which then quickly collapses, and is readily withdrawn without pain to the patient."

33. *Cranioclasm.*—Prof. SIMPSON laid before the Obstetrical Society of Edinburgh some casts and preparations of the heads of infants whose delivery had been effected by means of a new variety of craniotomy, which he proposed to call *Cranioclasm.* The peculiarity of the new operation was the fracturing of the base of the fœtal skull behind the foramen magnum, and at other points; and this Dr. S. had found it perfectly possible to effect when a proper pair of forceps were employed, although many high authorities had declared it impossible, under any circumstances, to diminish the size of the base of the cranium. The advantages of the operation were chiefly these: 1. By breaking up the base of the skull, diminution of the head of the child was produced at its firmest and most unyielding part, and that to such a degree as to render the passage of the head through the contracted maternal canals as easy as the transit of the shoulders or pelvis of the infant. 2. The necessity of breaking up the vault of the cranium into small pieces and removing the fragments was obviated; and thus at once the practitioner was saved much time and trouble, and the patient was freed from the danger of laceration which attends the removal of the sharp pieces of bone. 3. As the bones of the fœtal head, remaining in their normal relation, could be more easily kept covered and protected by the soft parts, the mother ran less risk of injury during the extraction of the head. And 4. The extraction of the head was further facilitated by the firm hold which could be obtained with the extracting forceps. The operation was performed by perforating the skull in the usual manner, and afterwards applying a pair of duckbill forceps to the skull—one blade inside the cavity, the other on the surface, so as to grasp the occipital bone close up to the foramen magnum, where, by a slightly twisting movement, the bone was fractured. By applying the forceps deeply, in the same

manner, over the bones at the sides and front of the skull, fracture of the basis could likewise be produced at those points. The forceps hitherto employed in this operation was a craniotomy forceps with serrated blades; and all that was required was, that they should be free at the joint, of such a curve as to admit of their easy adaptation to the head, and with the inner surface of the outer blade strongly bevelled or hollowed, so as to enable the smaller or convex inner blade to sink into it, and thus take a very firm hold of the included portion of the cranium. As a matter of convenience, the joint should be made movable, and yet firmly fitting, so as to act like a scissor-joint. The operation had now been performed in three cases, all of which were illustrated in the casts and preparations before the Society. 1. There were two casts of the head of the first child that had been delivered in this manner. One of the casts represented the head in its collapsed condition; the other was taken from the same head after it had bean stuffed out and restored nearly to its normal dimensions; and on comparing the two, it would be seen that the head had been diminished to the extent of about two inches in all its longest diameters. 2. There was a preparation of the second child that had been delivered in the manner described; and in this case the operation had been performed in the lying-in hospital by Dr. Keiller in Dr. Simpson's presence. By handling the head, the members of the Society could feel to what an extent the base of the skull had here been broken down. 3. There were two casts of the skull of a third fœtus who had been delivered by cranioclasm—one showing it crushed and collapsed, the other showing it in its natural form and size. A preparation of the skull of this fœtus was also laid before the Society, which could be easily seen to be fractured at the base in several places, viz., behind the foramen magnum, between the frontal and sphenoid bones, and between the temporal bones and the basilar process of the occiput.—*Edinb. Med. Journ.*, July, 1859.

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34. *Is the Usual Treatment of Post-partum Hemorrhage Correct?* By Dr. Lyall.—Amid the thousand and one expedients for the arrest of post-partum uterine hemorrhage, there are a few of universal acceptation—taught in the schools, prescribed in didactic works, and employed in all emergencies demanding special interference. These seem to constitute a portion of the broad beaten tract of the obstetric source, from which no one may think for a moment of turning aside, or even of entertaining a doubt that he walks in the right way. It will readily suggest itself to the minds of every one, that I here allude to the mechanical irritation of the uterus to induce it to contract, and the removal of clots from its interior, so as to get it to contract upon itself. In this practice was I instructed, and in this faith for many years practised; and the instruction and practice are, in a great measure, now what they were when I was a pupil, thirty years ago.

Let us take a case, and go over the ordinary mode of procedure. After the removal of the placenta, which, perhaps, has been somewhat tedious, the uterus contracts at longer intervals and more feebly than usual; at each contraction a quantity of blood is thrown out; the uterus is grasped through the external walls of the abdomen, and urged, by frictions and pinchings, to contract and expel its contents, which are now found gradually to increase; these means failing, and the woman getting more and more prostrate, cold water is dashed over the belly, the hand introduced within the cavity of the uterus, and the clots removed. Brandy and opium are prescribed; still the uterus fails to contract so as to prevent hemorrhage, sinking continues, till, pulseless and exsanguined, the woman dies. This consummation I have never witnessed, and trust I never may; but all preceding the final issue has been to me a matter of experience; the grievous discomfort of the patient lying in a plash of cold water, and the scarcely less grievous anxiety of the attendant watching and waiting on.

Such is the usual course of a fatal case of post-partum hemorrhage, and the most common means employed in its treatment; the chief object in view being to get the uterus to contract upon itself, so as to arrest the vital flow. Many other means out of the thousand and one to which I have alluded, are, no doubt, often used—galvanism, squeezing a lemon within the cavity of the uterus, blowing up a caoutchouc or common bladder within it, etc. etc., one or other of

which has preceded a recovery—"post hoc ergo propter hoc," the steeple preceding the sands. The indication of cure is, no doubt, a right indication, as the contraction of the uterus is the means employed by nature to arrest the hemorrhage loss; and it is usually because nature fails in the performance of this natural act that we are called on to interfere. But do we act aright in the mode of our interference? If the uterus act feebly, and fail to contract favourably, so as to stop up the uterine vessels, will we aid its feeble powers by excessive stimulation or irritation? We know that the stimulation of other organs in a weakened or feeble condition may soon exhaust, but cannot invigorate them; and why may the uterus be an exception to the ordinary physiological rule? Moreover, are we right in removing the clot from the interior of the organ? The uterus has been powerful enough by its contractions on the child to expel it; and will it now contract more powerfully on nothing than on a contained clot? All muscular fibres, we know, by contraction lose power—that is, the more they are shortened by action, the less power they have to continue shortening by continued action; and why may the uterus be an exception to the ordinary rule? These questions, and questions such as these, I put to myself, but failed to answer them favourably to the ordinary practice; and thus it came about that my mode of procedure changed. I do not feel anxious although the uterus contain a clot, and have long ceased to vex the organ by external and internal manipulation. Is this or the usual practice right?

If we consider the ordinary and natural mode of arrest of hemorrhage, we find that the blood coagulates within and around the mouths of the bleeding vessels, and that this coagulation is promoted by the sickness and fainting induced by the loss of blood; the very loss of blood, in fact, is a chief means employed by nature in arresting its further flow. In epistaxis, for instance, the bleeding nostril gets plugged up with a clot, which in time restrains the further flow; and in ordinary wounds, unless an arterial trunk of considerable size be injured, the same thing takes place. In epistaxis, we do not sedulously remove the clot, but rather aid its formation by plugging the nostrils, and diminish, if need be, the vis a tergo by venesection, and thus imitate nature in her conservative efforts to check the hemorrhage. Why our practice in uterine hemorrhage should be different I cannot see. The organ, having failed to secure its own vessels by its customary contraction, adopts the mode of coagulation to effect the same purpose; and we, forsooth, wiser than nature, would compel her back again into her forsaken course, and say to the uterus, You shall cease to bleed by contraction, and contraction alone; a coagulum is not to be formed, or, if formed, must be removed; but removed at last once too often, the organ and its possessor fail in the contest, and cease to strive forever. While thus condemning the "meddlesome midwifery" of intra and extra-uterine manipulation for the arrest of uterine hemorrhage, in which the very life-blood of the patient is squeezed out of her by these ill-considered efforts, the casualty is by no means one for non-interference; something must be done, and that quickly; but let it be in accordance with the principles and the rules of art. When, in surgery, we fail to reach and ligature a bleeding vessel, our next resource is pressure; and as we cannot tie the vessels of the uterus, pressure is our chief and remaining stay. At the risk of apparent egotism, I shall go over the mode of procedure I usually adopt, both for the prevention and arrest of uterine hemorrhage. As soon as the placenta is withdrawn, I place the patient on her back, put her hand over the uterus, and cause her to keep it there until I have drawn a bolster-slip or similar bandage underneath her: feeling for the uterus, I lay over it a folded flannel petticoat, or other large compress, and fix it in its place with the circular roller as tightly as it can well be drawn; a very considerable pressure is thus applied to the uterus from the first, as the compress should be sufficiently large to make the antero-posterior equal at least to the lateral diameter. If hemorrhage do take place, the bandage is still further tightened, and the compress enlarged; and if there be escape to any extent of blood per vaginam, then the long bandage is also applied, as described in *Lancet*, 1850, vol. i. p. 384. The patient is kept supine and motionless, so as to promote coagulation and repress cardiac action. I permit no shifting of clothes, or indeed anything demanding motion or likely to excite arterial activity; as pressure and

quiet I conceive to be quite adequate to prevent a fatal issue in uterine hemorrhage, if properly and timeously applied.—*Proceedings of Obstetrical Society of Edinburgh* in *Edinb. Med. Journ.*, July, 1859.

35. *Case of Labour during Typhus.*—Dr. William Cummins communicated (May 26, 1859) to the Cork Medical and Surgical Society the following case: Mary Sullivan, aged 35, when at the ninth month of pregnancy, had the misfortune to contract typhus fever from her child. On the fifth day a few rose-coloured spots appeared on the chest and abdomen, and the disease ran its course without unusual complication, but requiring a liberal allowance of wine, until the twelfth day, when labour commenced with a moderate sanguineous discharge from the vagina, and slight pains. About three hours after I was called to her, and found her mottled all over with dark, rose-coloured maculæ; teeth covered with sordes; tongue brown and dry; perfectly rational, and complaining of the pains. The scalp had been shaved, and she had lately had some sleep; urine in tolerable quantity; pulse 120, feeble; vagina soft, cool, and relaxed; os uteri nearly dilated, cool and natural; sanguineous discharge still continues moderately. The membranes were ruptured, and a tumbler of punch administered in divided doses; after a few hours the labour process terminated naturally, without a single unpleasant symptom, the child being born alive, but feeble; it survived two days. The mother required abundant stimulation, and an occasional opiate, with little other treatment, and that of the most ordinary kind; no bad symptoms appeared; and in ten or fifteen days she began to convalesce, and was soon perfectly restored; there was no secretion of milk, and the lochia were scanty. I was truly surprised to find, on making my vaginal examination during labour, that the uterus and vagina were the only parts of this poor woman not affected with the calor mordax of fever; it seemed as if a special Providence was watching over the parts most exposed to danger; as if Nature, with her accustomed vigilance, would not allow the dread disease to triumph uncontrolled over the double life; and truly it was wonderful to find, that when all the energies were prostrated, the essential uterine power was found equal to its task; and that while every organ, every function of the body, was impaired during a period of twelve days, the fœtus in utero was not left unprovided, and was brought into the world in a condition capable of surviving two days, although the natural source from which it should derive nutrition, after expulsion, was dried up.—*Dublin Quart. Journ. Med. Sci.*, Aug. 1859.

36. *Sudden Death from Occlusion of the Pulmonary Arteries seventeen days after Parturition.*—Dr. Draper Mackenzie communicated to the Obstetrical Society of London (July 6, 1859) two cases which had recently occurred in his practice. In the first the patient was thirty-two years of age, and had been delivered of her second child after a natural and easy labour. Seventeen days afterwards, while apparently in good health, she rose up convulsively, said she was choking, and died. On subsequently examining the body, a large, branching, fibrinous plug was found completely stopping up the right pulmonary artery and its immediate ramifications, while the entrance to the left pulmonary artery gave lodgment to a large and tolerably firm concretion. The heart was rather thin, and the lungs slightly congested; but there was no further trace of disease about the body. In the second instance, the patient had an easy labour, and, for a few days afterwards, all appeared to progress favourably, when she imprudently left her bedroom and exposed herself to cold. Shortly afterwards she was seized with difficulty of breathing, gasping, and cold clammy sweats, from which death relieved her in twenty minutes. Permission to make a post-mortem examination could not be obtained, and hence it could only be surmised that the fatal event was due to the plugging up of some important but smaller vessel than those found obliterated in the first example.

Dr. Graily Hewitt stated that an elaborate essay on sudden death during the puerperal state had been recently published in the "Memoirs of the Imperial Academy of Medicine of Paris," but the author of that essay had not thrown any considerable light on the interesting question of the cause of death under these circumstances. The case of the Duchess de Nemours, who died from

plugging of the pulmonary artery, would be in the recollection of the Fellows of the Society. From personal inspection of the clot, he was able to state that in that case the clot occupied the pulmonary artery and several of its ramifications, and was so firm that it could not have been formed subsequently to death. Respecting those cases in which sudden death during the puerperal state was connected with the presence of coagula in the pulmonary artery, he would hazard the following supposition as to the causes which lead to the coagulation: The blood was so altered in the pregnant woman as to favor coagulation, in the first place; and in the second place, the maintenance of the recumbent position usually rigidly enforced by the medical attendant during several days after labour, favoured the stagnation of the blood in the heart and chest. It was not unreasonable to suppose that these circumstances had much to do with the occurrence of this fatal accident.

Dr. PRIESTLEY recommended that in all cases of sudden death from occlusion of the pulmonary artery, an attempt should be made not only to give an accurate account of the thoracic organs, but also of the condition of the uterus and appendages, more especially of the bloodvessels and lymphatics. The researches of Virchow on this subject had conclusively shown the connection between emboli formed in the uterine veins and plugs found in pulmonary arteries; the value of reports on such cases would therefore be greatly enhanced if the investigation were carried further than the immediate seat of obstruction. He thought it not improbable that in chloro-anæmic conditions of the system, when there is an increase of fibrin in the blood, a very small amount of acrid material generated in or near the uterus, and added to the blood circulating in the vessels, might cause deposition of the fibrin, and consequent occlusion of the vessels.—*Medical Times and Gazette*, July 23, 1859.

37. *Cranial Blood-swellings.*—Dr. EDWARD RIGBY read a paper on this subject before the Obstetrical Society of London (July 6, 1859). After relating the histories of two examples, the author proceeds to show that these cases are not unfrequently mistaken for hernia cerebri, an exceedingly rare and dangerous malformation, and which never occurs on the parietal bone, but always over a fontanelle or a suture. On opening these cranial blood-swellings, they are found filled with dark, semi-fluid blood, beneath which the bone is healthy. The collection of blood is usually beneath the scalp and tendinous aponeurosis of the occipito-frontalis muscle, the bone being covered by its pericranium. Sometimes, though more rarely, the pericranium itself is elevated by the collection of sanguineous fluid; and besides these two forms, other modifications of cranial blood-swelling have been described, but if they really do occur, they are of exceeding rarity. Great misapprehension has been entertained by several authors respecting the progress of these tumours. Thus, it has been stated that much constitutional disturbance would be set up if this accumulation of blood were allowed to remain; that it would become putrid; that fever would result; that there would be danger of ulceration, sloughing, etc. Hence it has been recommended to open these swellings, and evacuate their contents at an early period, before these changes could occur. But the success of these modes of treatment has been anything but encouraging, and hence Dr. Rigby advises that the practice of Professor Naëgelé should be followed. This consists literally in doing nothing. As long as the infant remains healthy, the effusion will gradually be absorbed, so that by the time the child is a month old the tumour will have entirely disappeared.—*Medical Times and Gazette*, July 23.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Epilepsy succeeding a Suppression of the Menstrual Discharge, cured by the Supervention of Dysentery and the Restoration of the Catamenia. By SAMPSON EAGON, M. D., of Bot. County, Va.

Miss T. R., æt. 17, had the menstrual function established at 15, and it continued normally until the 17th year, when from exposure of the feet to moisture and cold at one of the periods, the catamenial discharge was arrested. For several periods she suffered the ordinary pain and discomfort of amenorrhœa, and at the fourth month of amenorrhœal suffering she was attacked with epilepsy; I was at this period called to see her. After an unsuccessful effort to re-establish the catamenial flux (it being a period), the patient was put upon treatment for epilepsy, the treatment consisting principally in the use of tonics, antispasmodics, revellents, and emmenagogues. The epileptic convulsions, however, continued to recur with undiminished violence, notwithstanding the treatment was assiduously persevered in for more than twelve months. The argent. nitras, several of the salts of iron and copper, as well as sulphate of quinia, were given a fair trial, but without decided benefit.

The paroxysms in this case were of the most violent character, and lasted for several hours night and morning of each day. After having fairly tested the virtues of the most popular anti-epileptic means in the case, with so little success, Dr. Woodson (the consulting physician) and myself abandoned all hope of relieving her. In July, 1858, dysentery became epidemic in her locality, with which disease she was attacked in a severe form. Having been called again to the patient at this period, and hoping now that the constant tenesmus and irritation of the large intestine might extend by contiguous sympathy to the torpid uterus, I was careful not to arrest the dysenteric discharge too hastily, prescribing only a half grain of opium, with two of the mild chloride of mercury, repeated every eight hours. On the second day I learned from the patient's mother, that the menstrual discharge was regularly flowing, and I found the young lady free from epileptic symptoms. The dysentery soon subsided, and the young lady quickly returned to almost perfect health, and is now quite well. The only means that have been since employed in the treatment, have been a pretty active purgative of aloes and rhubarb conjoined with a warm hip-bath, used for several nights before each expected return.

There are two points of interest, as I conceive, in the case above detailed, 1st. The undoubted relation which here existed between the amenorrhœa and epilepsy as cause and effect; and 2d. The means employed by nature to produce relief, an irritation propagated from the rectum and colon to the uterus by contiguous sympathy.

Singular Malformation of the Genito-Urinary Organs. By W. S. DUNCAN, M. D., Brownsville, Pa.—On the 4th of January, 1859, I attended Mrs. G——, in her second confinement. She gave birth to a plump, healthy looking child, rather above the average size. In handing the child

from the mother's bed to the nurse, I noticed a malformation of the external genitals. Closer inspection showed a slight linear depression extending from the summit of the sub-pubic arch, to a point a little in advance of the normal position of the anus. On each side of this depression was a protuberance having some resemblance to the labia majora, though more prominent and shorter than natural, the two sides looking as though they might have been the two halves of a divided scrotum. There was no trace or rudiment of labia minora or vagina. At the anterior extremity of the linear depression was attached a vermiform body, or rudimentary penis, nearly an inch in length, and four lines in diameter. It had a firm cartilaginous feel, and was bent in the form of a half circle, turning up towards the abdomen. At the end of this body was an opening two lines in diameter. The anus was entirely absent, nor was there the slightest depression between the nates.

From the formation of the external genital organs, no one could have decided positively to which sex this child belonged.

The parents refused to have any operation for the formation of an anus attempted, thinking, probably, that their child would be better dead than to live to adult life with this abnormal condition of the genito-urinary organs.

At the end of the third day after birth, death ensued, preceded by distended abdomen, constant fretfulness, and occasional vomiting.

Autopsy ten hours after death. Intestines distended with gas. Rectum much larger in diameter than natural, and prolonged forwards to the sub-pubic arch, where it was constricted to the size of a goose-quill, passed beneath the arch, and terminated in the vermiform body. Left kidney and supra-renal body absent, right kidney three times the natural size, though normal in shape. The ureter terminated in the posterior wall of the rectum a little below the promontory of the sacrum, *the bladder being absent.* There were *two* distinct and well formed uteri, each three-fourths of an inch in length, one attached to, and terminating in, each side of the rectum, at the superior strait of the pelvis. Each uterus had one ovary and one Fallopian tube attached to its posterior surface.

In this singular specimen we have congenital absence of one kidney, the bladder, vagina, and rectum in a single cavity, and all communicating externally by a single duct not more than two lines in diameter.

DOMESTIC SUMMARY.

Ligature of the Common Iliac Artery for Aneurism—Use of Silver Ligature—Death on the twenty-sixth day from Exhaustion, by Dysentery. By WARREN STONE, M. D., Professor of Surgery in University of Louisiana.—Charles O'Donnell, aged thirty-six years, was admitted into the Charity Hospital December 18, 1858, labouring under aneurism of the external iliac and upper part of the femoral arteries. It was a plain, unmistakable aneurismal tumour, extending from two inches below Poupart's ligament, to two inches and a half above it. The tumour was rather prominent, and the pulsation strong, but there was no inflammation or discoloration of the skin. He stated that he first perceived it about the middle of April previous, but he took little notice of it until July, when the leg began to swell below, and he suffered shooting pains down the leg, which disturbed his rest at night. His general health was bad; he could take but little food; stomach much deranged; bowels irregular, sometimes constipated, and sometimes loose, and of a dysenteric character.

As the tumour did not seem to be increasing very fast, it was thought best to give the patient rest, and endeavour to improve his health before resorting to

any operation. Under rest and opiates, the tumour remained nearly stationary for some time, and his general health improved; but about the middle of January, 1859, it suddenly enlarged, and some inflammatory action was set up. The operation by ligature was offered to the patient, as the only chance of saving his life; but as I could not offer him very strong encouragement, he declined having it made. But his sufferings increased, and on the 26th he concluded to take the chance of an operation, which I accordingly made. An incision was made from the upper edge of the tumour nearly in the course of the linea semilunaris up to the cartilage of the ribs, and the abdominal walls carefully divided down to the internal common fascia, which was peeled up from its loose attachment to the walls, and, with the peritoneum, pushed aside until the artery was uncovered. There was some difficulty in detaching these tissues at the lower part where they came in contact with the tumour and became adherent, and a small rent was made into the peritoneal cavity, but no serious injury was sustained by it. A small portion of omentum protruded once, but it was returned, and did not appear again. A common silk ligature was carried under the common iliac, by means of an aneurismal needle, and the silver wire attached to it and drawn through. This was tied like a common silk ligature, and the ends cut near the knot, and the points bent down so as not to present to the soft parts. The knot was not drawn strongly as is usual; but only sufficiently so to stop the current of blood in the artery. The wound was brought together by the twisted suture, and the patient appeared in a favourable condition. The extremity became cooler than the other, and there was some pain in it, but by the use of artificial warmth and diffusible stimulants, the circulation was gradually established, and no symptoms of gangrene appeared.

The tumour subsided very favourably, and the patient was almost entirely relieved from pain in it, and did well for several days, when the dysenteric symptoms returned with increased violence and continued until his death, which took place on the 20th February, the twenty-sixth day after the operation. The operation was on the left side, and it is probable that the displacement and handling of the descending colon, and the sigmoid flexure, increased the diseased action which already existed.

Being unwell at the time of this patient's death, I did not attend the Hospital for a day or two, and the clerk delivered the body to the wife of the deceased for burial, and no post-mortem examination was made. This was an unpardonable blunder, for it would have been of great value to have observed the manner in which the silver ligature was disposed of, and the result of a moderately light ligature of materials that will not excite ulceration of the coats of the vessel, unless the tissues are completely strangulated. I am confident that the silver thread may be applied sufficiently tight to completely interrupt the current of blood through the artery without strangulating the tissues of the vessel so as to cause its division by ulceration. If this is correct, the danger of secondary hemorrhage in tying large arteries may be entirely avoided. The danger from hemorrhage after the ligature for aneurism is so great that it has become the settled practice to use the painful, tedious, and uncertain method of compression, where it can be made, and the ligature is only resorted to when this method fails. Setting aside the danger of secondary hemorrhage, the ligature must be allowed to be the best operation. It is soon completed, and the patient receives immediate relief from pressure and pain in the tumour, which often diminishes in size and leaves a smaller amount of coagulated blood to absorb than when the circulation is arrested by degrees, and the blood in the sack is made to coagulate while it is fully distended. A common silk ligature, if applied only just tight enough to the artery to arrest the current of blood, is slow in coming away, and obliterates it as certainly as if it was tied so as to cut the inner coat of the vessel, according to the directions of Jones. When I was a student, my preceptor (the late Dr. Amos Twitchell) made experiments to test the truth of the assertion of this surgeon, that it was necessary to draw the ligature so as to cut the inner coat of the artery in order to produce adhesive inflammation, and proved that it was mere theory, and not a fact. The truth is, that adhesive inflammation does not take place in the inner surface of ligated arteries under any circumstances; at least I have never found it in the cases I have examined. When

an artery is tied in its course, so as to arrest the current of blood, a coagulum is formed on the proximal side, but not on the distal side, of the ligature, and hence it is that hemorrhage often takes place from the distal extremity, when the anastomosis and collateral circulation is free, in cases when the adhesive process has been perfectly good. The coagulum acts as a plug which is held in place or kept from being forced out by the heart's action, by the lymph that is thrown out in and around its coats so as to thicken them and hold them in the puckered condition in which the ligature places it. On the distal side, as no clot is formed, if the vessel is filled with blood, and the patient makes much exertion about the time the ligature comes away, hemorrhage will often take place, and I believe is frequently mistaken for hemorrhage from the proximal side. This mistake may cost the patient his life; for, if a ligature is applied higher or nearer the heart, it may not stop the bleeding, but lead to serious consequences; whereas, a very little compression over the sinus left by the ligature, until the granulations fill it up, renders it perfectly safe.

It is plain, however, that, when an artery is tied in its course, it is not necessary to tie it so as to make a division of its coats by ulceration, if the ligature is of silver or any material that will not cause ulceration by its presence. All that is required of the ligature in the case of aneurism is to arrest the current of blood in the artery, and this can be done without strangulating the tissues inclosed in the ligature so as to cause a division. In the case here related, as the vessel tied was so large, and the organic functions were so feebly carried on, I feel confident that hemorrhage would have taken place if the ordinary silk ligature had been used in the usual way. In this connection I will take occasion to express my sense of what is due to Dr. J. M. Sims for introducing the silver ligature, as well as establishing a successful method of operating for vesico-vaginal fistula and analogous lesions, which is mainly due to the silver suture.

Up to the time Dr. Sims laid before the profession his mode of operating for vesico-vaginal fistula, it must be admitted that no successful mode of treatment had been established, and hundreds of females labouring under this most loathsome and painful affliction were left in hopeless misery. It is true that an occasional cure was effected under favourable circumstances, but these cases were rare exceptions to the general rule. Since the method of Dr. Sims has been adopted, all the bad cases that were formerly pronounced incurable are cured with great certainty. The attention of the profession was called a few years ago to the button suture of Dr. Bozeman, of Montgomery, Alabama, which, by many, is considered an improvement, and it has been quite generally adopted. It is not my object to discuss the merits of this improvement. Dr. Sims uses the plain interrupted suture, and no one operates with more success, I believe, than he does; but if others realize more favourable results by the button suture than by the simple it is their duty to adopt it. I see nothing in this improvement that detracts from the merits of Dr. Sims, however much it may redound to the credit and honour of the inventor. It would seem that Dr. Sims thought otherwise, and setting aside all his well-founded claims to merit for his indomitable perseverance in inventing instruments and simplifying the operation, he bases them entirely upon the introduction of the silver suture. This he set forth in a paper he read before the New York Academy of Medicine, in which he may have indulged in some pardonable egotism, and unfortunately brought forward personal matters, that belonged to him and Dr. Bozeman alone. This gave the friends of Dr. Bozeman (who seemed to have been sharp critics) an excuse for a severe criticism, and they not only ridiculed his paper, but his claim to the discovery of the silver suture. Although there was in these criticisms an affectation of rendering some undefined merit to Dr. Sims, the effect with strangers was calculated to do him great injustice. It was urged (and with truth it must be admitted) that the silver and other metallic sutures were known long since. Dr. Levert, of Mobile, made experiments as long ago as 1828, and published the results (which were highly favourable) in the *American Journal of Medical Sciences* of that year, but no one acted upon the principle thus established.

When a principle is put to practical use, if it is important, many aspirants spring up for the honour of the discovery. Dr. Simpson, of Edinburgh, on read-

ing the discourse of Dr. Sims, was reminded that he had read somewhere the report of a successful case operated upon in which the silver suture was used. He instituted a correspondence on the subject, and finally found that it was reported in a London journal in the year 1835. Dr. Simpson is a very ingenious man, and ready to adopt any improvement that gives promise of value, but this case passed him unnoticed, and would, in all probability, never have been thought of again if he had not read the discourse of Dr. Sims. The remarks of Sidney Smith, in the defence of Hamilton, who established a system of education, when the critics denied the originality of the system, are very appropriate. He says: "Whether Hamilton is or is not the inventor of the system that bears his name, or what his claims to originality may be, are questions of very second-rate importance; but they merit a few observations. That man is not the first discoverer of any art who first says the thing; but he who says it so long, so loud, and so clearly that he compels mankind to hear him. The man who is so deeply impressed with the importance of the discovery that he will take no denial, but, at the risk of fortune or fame, pushes through all opposition, and is determined that what he has discovered shall not perish for the want of a fair trial. Other persons had witnessed the effect of coal gas in producing light; but Windsor worried the town with bad English for three winters before he could attract any serious attention to his views. Many persons broke stone before Macadam, but Macadam felt the importance of the discovery more strongly, stated it more clearly, persevered in it with greater tenacity, wielded his hammer, in short, with greater force than other men, and finally succeeded in bringing his plan into general use."

When Civiale brought before the profession of Paris his admirable surgical operation, called lithotrity, the critics attempted to write him down, and denied that the process of breaking down stone in the bladder was a new invention. After having proved that he was not the inventor of his instruments, they attempted to show that the instruments themselves were detestable, and further, that Civiale did not know how to use them. Civiale, however, was happy in his associations. The eminent Chaussier and Percy concluded their report upon the subject of Lithotrity, to the Academy of Science, in these words: "Lithotrity is glorious for French surgery, honourable to its inventor, and consoling to humanity;" and a writer, in reply to these critics, who would deprive Civiale of the merit of originality, says: "In effect, the only true proprietor of a surgical improvement is he who applies it successfully, all theoretical reasonings and the cavillings of chronologists to the contrary notwithstanding."

Whether Dr. Sims bases his claims for distinction upon his indomitable perseverance under repeated failures and disappointments, ill health, and other impediments, in endeavouring to establish the curability of vesico-vaginal fistula, or merely upon the introduction of the silver suture, as embracing the whole merit, he is clearly entitled to it, and these just acknowledgments no more detract from the merit of those who have made valuable improvements than those improvements detract from the merits of the original inventor.

I have made these few remarks in justice to the profession, rather than from any partiality from any individual member. Whatever an individual member may do that redounds to his honour, sheds a proportionate lustre upon the whole profession, and nothing detracts from it so much as our own bickerings and injustice to each other.—*New Orleans Med. and Surg. Journ.*, Sept. 1859.

Inversion of the Uterus successfully reduced on the sixteenth day after the Accident.—Dr. George Mendenhall publishes (*Cincinnati Lancet and Observer*, July, 1859) an interesting case of this. The subject of it was twenty-four years of age, in good health, and the present her second accouchement. The period at which the inversion took place, or the cause of it, is not very apparent from the history. Dr. M. was not called until the sixteenth day after the accident, when he found the patient in bed, in a comfortable condition, free from pain or other special inconvenience. By examination a complete inversion was readily made out; the uterus occupied the entire vagina, and completely filled the concavity of the sacrum.

Dr. M. proceeded to reduce the organ in the following manner: The patient was laid on her back, and placed under the anæsthetic influence of a mixture of

sulphuric ether and chloroform. "The right hand was introduced, without very great difficulty, into the vagina, the body of the uterus grasped and carried upwards in a line corresponding with the axis of the pelvis, and steady pressure made in that direction, so as to put the vagina and utero-vaginal connection on the stretch. The left hand was placed on the abdomen, and the fingers against the outer edges of that portion of the uterus looking towards the cavity of the abdomen (which could be distinguished plainly), and counter-pressure was made for the double purpose of preventing injury to the utero-vaginal connections, and also for the purpose of facilitating the turning of the os and neck of the uterus over the body and fundus. I am quite certain that this manipulation increased the facility of reduction, and added to the safety of the structures involved. The cramped position of the hand was occasionally relieved by passing a large rectum bougie, which was retained against the fundus by the hand in the vagina, and thus keeping up the pressure constantly.

"The turn of the uterus commenced at the neck, and was continued along the body until it involved the fundus. While this turning was in progress, the os could be felt enveloping successive portions of the body, until the fundus was also embraced by it. As soon as this portion was well above the os, the bougie was relied upon entirely for the completion of the reduction; the latter part of which took place rapidly with the point of the bougie at the fundus, and which was enveloped by the uterus in its natural cavity, when the reduction was complete. The fundus of the uterus (inclosing the bougie) could be felt very plainly above the pubes, while the lips and neck could easily be distinguished in the vagina, by passing the fingers alongside the bougie. This instrument was left in the uterus, and an injection of fifty drops of laudanum in two ounces of starch water, administered by the rectum, as soon as the effects of the anæsthetic passed off; which was in a very short time. She said she felt quite comfortable, and had not experienced much pain in the operation; her pulse and breathing were good, and no stimulant was required. The amount of blood lost was small, although the discharge was somewhat increased."

This case, with those related by Prof. White (*American Journ. Med. Sci.*, July, 1858, p. 13), and Dr. W. T. Smith (*Ibid.*, p. 270), afford encouragement to attempt replacement in cases of inverted uterus, even after a lapse of time which has hitherto been supposed to forbid any hope of relief.

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Bibron's Antidote.—Dr. D. O. C. HEERY relates (*Atlanta Med. and Surg. Journ.*, Aug. 1859) the following case of rattlesnake bite in which he employed Bibron's Antidote with success:—

"In travelling through Southwestern Georgia, in April last, I happened at the house of Col. B. Shortly after my arrival, he informed me that one of his most valuable negroes had just been bitten by a large rattlesnake (crotallus confluentus) while returning from the field. The negro was bitten on the ankle of the left leg. The snake inflicted a very deep wound, and within five minutes after the bite, before much pain or swelling had ensued, I administered one dose of Bibron's Antidote, in two tablespoonfuls of brandy, and the symptoms almost immediately disappeared. One hour after the bite, pain and swelling returned, attended with considerable throbbing. I repeated the antidote, and in less than fifteen minutes the ankle had regained its natural appearance—all pain and swelling having vanished. Before returning, I repeated the dose a third time. In the morning he was perfectly well, and resumed his duties in the field."

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Veratrum Viride in Chorea and other Convulsive Diseases.—Dr. P. D. BAKER, of Eufaula, Ala., asserts (*Southern Med. and Surg. Journ.*, Sept. 1859) that the veratrum viride is as valuable a nervine as an antiphlogistic, and that in the treatment of certain neuroses it is unrivalled. He states that he has administered it in numerous cases of eclampsia in children with such success as to convince him of the power of this agent in arresting convulsions; indeed he believes that it is impossible for convulsions to continue after the system has been fully impressed by the remedy. He has also used it in puerperal convulsions and chorea with benefit. In short, he places more reliance upon the veratrum viride in all convulsive affections than upon any other agent of the materia medica.

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UNIVERSITY OF PENNSYLVANIA—MEDICAL DEPARTMENT.

NINETY-FOURTH SESSION (1859–60).

WILLIAM GIBSON, M. D., Emeritus Professor of Surgery.

SAMUEL JACKSON, M. D.,	Professor of Institutes of Medicine.
GEORGE B. WOOD, M. D.,	Professor of Theory and Practice of Medicine.
HUGH L. HODGE, M. D.,	Professor of Obstetrics and the Diseases of Women and Children.
JOSEPH CARSON, M. D.,	Professor of Materia Medica and Pharmacy.
ROBERT E. ROGERS, M. D.,	Professor of Chemistry.
JOSEPH LEIDY, M. D.,	Professor of Anatomy.
HENRY H. SMITH, M. D.,	Professor of Surgery.

WILLIAM HUNT, M. D., Demonstrator of Anatomy.

The Lectures of the Session will begin on the second Monday of October and close on the first of March.

Clinical Instruction is given throughout the Session, in the Medical Hall, by the Professors, and at the Pennsylvania and other Hospitals.

The Dissecting Rooms, under the superintendence of the Professor of Anatomy and the Demonstrator, are open from the middle of September.

The room for Operative Surgery and the Application of Bandages, &c., is open early in September and throughout the Session, under the supervision of the Professor of Surgery.

Surgical Demonstrator, C. S. BISHOP, M. D.

FEES: For the Lectures (each Professor $15), $105; Matriculation Fee (paid once only), $5; Graduation Fee, $30.

R. E. ROGERS, M. D., *Dean of the Medical Faculty, University Building.*

F. B. DICK, *Janitor, University Building.*

PENNSYLVANIA COLLEGE—MEDICAL DEPARTMENT.

NINTH STREET, BELOW LOCUST, PHILADELPHIA.

SESSION OF 1859–60.

FACULTY.

B. HOWARD RAND, M. D.,	Professor of	Chemistry.
HENRY HARTSHORNE, M. D.,	"	Practice of Medicine.
LEWIS D. HARLOW, M. D.,	"	Obstetrics, &c.
WILLIAM S. HALSEY, M. D.,	"	Surgery.
WM. HEMBEL TAGGART, M. D.,	"	Materia Medica.
JAMES AITKEN MEIGS, M. D.,	"	Institutes of Medicine.
WM. H. GOBRECHT, M. D.,	"	Anatomy.

THEODORE A. DEMMÉ, M. D., Demonstrator of Anatomy.

The Session of 1859–60 will commence on Monday, 10th of October, and continue, without intermission, until the first of March. The Commencement for conferring Degrees will take place early in March, causing as little detention of the Graduating Class, after the close of the Lectures, as possible.

There will also be an examination of candidates for graduation, on the 1st of July; the Degree, in such cases, being conferred at the ensuing Commencement in March.

The Rooms for Practical Anatomy will be open early in September.

The College Clinic will be conducted on every Wednesday and Saturday throughout the Session.

The Register of Matriculants will be open in the College Building, early in September. The Janitor will always be present at the College, to give every necessary assistance and information (as regards board, &c.) to students, on their arrival in the city.

Matriculation (paid once only), $5 00; For each Professor's ticket, $15 00; Graduation, $30 00.

LEWIS D. HARLOW, M. D., *Dean,*
No. 1023 *Vine below* 11*th Street.*

July, 1859.—2t.

JEFFERSON MEDICAL COLLEGE.

The Course of Lectures will commence on Monday, the 10th of October, and continue until the 1st of March.

ROBERT M. HUSTON, M. D., { Emeritus Professor of Materia Medica and General Therapeutics.

Institutes of Medicine, etc., ...	By Prof. ROBLEY DUNGLISON, M. D.
General, Descriptive and Surgical Anatomy, .	" JOSEPH PANCOAST, M. D.
Obstetrics and Diseases of Women and Children,	" CHARLES D. MEIGS, M. D.
Chemistry, ...	" FRANKLIN BACHE, M. D.
Institutes and Practice of Surgery, . .	" SAMUEL D. GROSS, M. D.
Materia Medica and General Therapeutics, .	" THOMAS D. MITCHELL, M. D.
Practice of Medicine, ...	" SAMUEL H. DICKSON, M. D.
Demonstrator of Anatomy, . .	ELLERSLIE WALLACE, M. D.

Clinics will be held regularly during September; and every Wednesday and Saturday in October, and during the course, Medical and Surgical cases will be investigated, prescribed for, and lectured on before the Class. During the year ending March the first, 1859, a vast number of medical and surgical cases were treated, and about *two hundred and fifty* operations were performed; amongst them many major operations—as amputation of the leg, extirpation of the upper and of the lower jaw, mamma, and eye, and six cases of lithotomy.

The lectures are so arranged as to permit the student to attend the clinics of the Pennsylvania Hospital, and of the Philadelphia Hospital.

On and after the 1st of October, the dissecting-rooms will be open, under the direction of the Professor of Anatomy and the Demonstrator.

FEES:

Matriculation, which is paid only once, ...	$ 5
To each Member of the Faculty $15, ...	105
Graduation, ...	30

ROBLEY DUNGLISON, M. D.,
Dean of the Faculty.

ST. LOUIS MEDICAL COLLEGE.

THE Regular Lectures in this Institution will commence on the first day of November, 1859, and continue until March. A Preliminary Course at the College, as also Clinical Lectures at the Hospitals and the Dispensary, will be delivered without extra charge, during the month of October.

M. L. LINTON, M. D., Professor of the Principles and Practice of Medicine.

A. LITTON, M. D., Professor of Chemistry and Pharmacy.

CHARLES A. POPE, M. D., Professor of the Principles and Practice of Surgery and Clinical Surgery.

M. M. PALLEN, M. D., Professor of Obstetrics and Diseases of Women and Children.

W. M. MCPHEETERS, M. D., Professor of Materia Medica and Therapeutics.

CHARLES W. STEVENS, M. D., Professor of General, Descriptive, and Surgical Anatomy.

JOHN B. JOHNSON, M. D., Professor of Clinical Medicine and Pathological Anatomy.

J. H. WATTERS, M. D., Professor of Physiology and Medical Jurisprudence.

E. H. GREGORY, M. D., Demonstrator of Anatomy.

The most ample opportunities for clinical instruction, both in Medicine and Surgery, are afforded by the several large Hospitals and Dispensary under the care of the Faculty. There is also an abundance of material for the study of Practical Anatomy.

FEES: For the entire Course, $105; Matriculating Ticket (paid but once), $5; Dissecting Ticket, $10; Hospital Tickets, gratuitous; Graduating Fee, $20.

Students or others, desiring further information, can either address the Dean, and he will forward them a descriptive pamphlet, or on arriving in the city, call upon him at his office, southwest corner of Tenth and Locust Streets, or on the Janitor of the College, corner of Seventh and Myrtle Streets.

CHARLES A. POPE, M. D., *Dean.*

May, 1859.

MEDICAL COLLEGE OF OHIO.

SESSION OF 1859–60.

FACULTY.

L. M. Lawson, M. D.,	Professor of the Theory and Practice of Medicine.
Jesse P. Judkins, M. D.,	Professor of Anatomy.
George C. Blackman, M. D.,	Professor of Principles and Practice of Surgery and Clinical Surgery.
George Mendenhall, M. D.,	Professor of Obstetrics.
C. G. Comegys, M. D.,	Professor of Institutes of Medicine.
John A. Murphy, M. D.,	Professor of Materia Medica and Therapeutics.
H. E. Foote, M. D.,	Professor of Chemistry and Toxicology.
B. F. Richardson, M. D.,	Professor of Diseases of Women and Children.
James Graham, M. D.,	Professor of Clinical Medicine.
William Clendenin, M. D.,	Demonstrator of Anatomy.

L. M. Lawson, M. D., Dean, *Northwest corner of Sixth and Walnut Streets.*
George Mendenhall, M. D., Registrar, 197 *Fourth Street.*

OPENING OF THE COURSE.

The *regular course* will open on the 18th of October, and terminate on the last of February. Students are earnestly advised to be early in attendance, especially those who expect to be candidates for graduation; as credit for a full course cannot be allowed unless the pupil matriculates at an early period, and observes regular attendance on the lectures. Clinical lectures will be delivered at the Commercial Hospital and City Dispensary during September and October, previous to the commencement of the regular course.

The Public Commencement will take place early in March, with as little delay after the close of lectures as practicable.

FEES.

For the whole course	$90 00
Dissecting Ticket	6 00
Graduation Fee	25 00

The student can take one or more tickets, as may suit his purposes.

The Dissecting Ticket is optional, except that the candidates are required to take it once.

Students, on arriving in the city, by calling at the College (on Sixth Street, between Vine and Race), will be conducted to good boarding-houses, where they can be accommodated with board at from $2 50 to $4 00 per week.

Further information may be obtained by addressing

L. M. LAWSON, M. D., *Dean.*

MEDICAL COLLEGE OF VIRGINIA.

SESSION OF 1859-'60.

The Annual Course of Lectures will commence on the first Monday in October, and continue until the 1st of March.

Charles Bell Gibson, M. D.,	Professor of Surgery and Surgical Anatomy.
David H. Tucker, M. D.,	Professor of Theory and Practice of Medicine.
Beverley R. Wellford, M.D.,	Professor of Materia Medica and Therapeutics.
Arthur E. Peticolas, M. D.,	Professor of Anatomy.
Levin S. Joynes, M. D.,	Professor of Institutes of Medicine and Medical Jurisprudence.
James H. Conway, M. D.,	Professor of Obstetrics and Diseases of Women and Children.
James B. McCaw, M. D.,	Professor of Chemistry and Pharmacy.
Marion Howard, M. D.,	Demonstrator of Anatomy.

The study of Practical Anatomy may be prosecuted with the most ample facilities, and at a very trifling expense.

Clinical Instruction will be given in the Infirmary connected with the College, which is under the same roof with the Lecture-rooms, and is at all times well filled with Medical and Surgical cases. Students also enjoy the Clinical facilities afforded by the Richmond Almshouse, which is under the medical charge of one of the Professors.

A Prize of *One Hundred Dollars*, offered by Dr. Thomas D. Warren, of North Carolina, will be awarded to the Member of the Graduating Class who shall present to the Faculty the *best Essay* on any medical subject.

Fees.—Matriculation, $5; Ticket of each Professor, $15; Graduation, $25.

L. S. JOYNES, M. D.,
Dean of the Faculty.

HARVARD UNIVERSITY.

MASSACHUSETTS MEDICAL COLLEGE.

THE Annual Course of the Medical Lectures of Harvard University will commence at the Massachusetts Medical College, in North Grove Street, Boston, on the first Wednesday of November, 1859. The regular course will be as follows:—

D. HUMPHREYS STORER, M. D.,	Professor of Obstetrics and Medical Jurisprudence.
JOHN B. S. JACKSON, M. D.,	Professor of Morbid Anatomy.
HENRY J. BOWDITCH, M. D.,	Professor of Clinical Medicine.
OLIVER W. HOLMES, M. D.,	Professor of Anatomy and Physiology.
GEORGE C. SHATTUCK, M. D.,	Professor of the Theory and Practice of Physic.
HENRY J. BIGELOW, M. D.,	Professor of Surgery.
JOHN BACON, M. D.,	Professor of Chemistry.
EDWARD H. CLARKE, M. D.,	Professor of Materia Medica.

RICHARD M. HODGES, M. D., Demonstrator.

Clinical Medical and Surgical Instruction is given at the Massachusetts General Hospital, with surgical operations.

Collateral special medical instruction will also be given at the Hospital by lectures and otherwise, by Drs. Bowditch, Abbot, and Ellis. Abundant material is afforded for the study of Practical Anatomy. The room devoted to this department is open day and evening, and lighted by gas.

Fees for the Lectures $80. Matriculation Fee $3. Graduation Fee $20.

Good Board can be obtained at $2 50 to $5 per week. Boarding places provided on application to the Janitor at the College.

Students are requested, upon coming to Boston, to call upon the Dean.

D. HUMPHREYS STORER, Dean of the Faculty,
October 1, 1859. *No.* 132 *Tremont Street, Boston.*

BOYLSTON MEDICAL PRIZE QUESTIONS.

The Boylston Medical Committee, appointed by the President and Fellows of Harvard University, consists of the following Physicians:—

EDWARD REYNOLDS, M. D.	J. MASON WARREN, M. D.	JOHN JEFFRIES, M. D.
D. H. STORER, M. D.	S. D. TOWNSEND, M. D.	CHARLES G. PUTNAM, M. D.
J. B. S. JACKSON, M. D.	MORRILL WYMAN, M. D.	HENRY J. BIGELOW, M. D.

At the Annual Meeting of the Committee, on Wednesday, August 3, 1859, a premium of Sixty Dollars, or a gold medal of that value, was awarded to CALVIN ELLIS, M. D., of Boston, for the best dissertation on the following question:—

Tubercle—its Pathology, and especially its Relation to Inflammation.

No premium was awarded for either of the dissertations on the question—

New and useful views upon any subject in Medicine and Surgery.

The questions for 1860 are:—

1. *How far does the Microscope assist us in Surgical Diagnosis?*
2. *The Value and the Fallacy of Statistics in the Observation of Disease.*

Dissertations on these subjects must be transmitted, post paid, to Edward Reynolds, M. D., *on* or *before* the *first Wednesday* of April, 1860.

The following questions are proposed for 1861:—

1. *Excision of Joints.*
2. *Diagnosis and Treatment of Chronic Pleurisy.*

Dissertations on these subjects must be transmitted as above, *on* or *before* the *first Wednesday* of April, 1861.

The author of the best dissertation considered worthy of a premium on either of the subjects for 1860, will be entitled to a premium of *ninety dollars*, or a gold medal of that value, at his option: and for 1861, *sixty dollars*, or a gold medal of that value.

Each dissertation must be accompanied by a sealed packet, on which shall be written some device or sentence, and within which shall be inclosed the author's name and residence. The same device or sentence, is to be written on the dissertation to which the packet is attached.

The writer of each dissertation is expected to transmit his communication to the Chairman of the Committee, in a legible handwriting, within the time specified.

All unsuccessful dissertations are deposited with the Secretary, from whom they may be obtained, with the sealed packet unopened, if called for within one year after they have been received.

By an order adopted in 1826, the Secretary was directed to publish annually the following votes:—

1st. That the Board do not consider themselves as approving the doctrines contained in any of the dissertations to which premiums may be adjudged.

2d. That in case of publication of a successful dissertation, the author be considered as bound to print the above vote in connection therewith.

J. MASON WARREN,
Secretary.

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2.	Congestion	5 "			
3.	Inflammation	79 "	with	6	wood-cuts.
4.	Termination and Results of Inflammation	109 "	"	18	"
5.	Textural Changes	22 "			
6.	Congenital Malformations	4 "			
7.	Tumors or Morbid Growths	78 "	"	25	"
8.	Scrofula	8 "			
9.	Wounds	85 "	"	15	"
10.	Effects of Injuries on the Nervous System	11 "			
11.	Syphilis	78 "	"	8	"
12.	General Diagnosis	22 "	"	5	"
13.	Minor Surgery	39 "	"	43	"
14.	Operative Surgery	15 "			
15.	Plastic Surgery	6 "			
16.	Subcutaneous Surgery	5 "	"	1	"
17.	Amputations in general	45 "	"	21	"
18.	Excisions of Bones and Joints	9 "	"	3	"
19.	Anæsthetics	10 "			

PART II.—SPECIAL SURGERY.

CHAPTER 1.	Diseases and Injuries of the Skin and Adipose Tissue	63 "	"	7	"
2.	Diseases and Injuries of the Muscles, Tendons, Bursæ, and Aponeuroses	18 "	"	3	"
3.	Diseases and Injuries of the Lymphatic Vessels and Ganglia	9 "	"	3	"
4.	Diseases and Injuries of the Nerves	20 "			
5.	Diseases and Injuries of the Arteries	154 "	"	57	"
6.	Diseases and Injuries of the Veins	15 "	"	3	"
7.	Affections of the Capillaries	10 "	"	4	"
8.	Diseases and Injuries of the Joints	188 "	"	68	"

VOLUME II.

SPECIAL SURGERY—Continued.

CHAPTER 1.	Diseases and Injuries of the Bones, and their Affections	234 "	"	144	"
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3.	Diseases and Injuries of the Spinal Cord and Column	25 "	"	11	"
4.	Diseases and Injuries of the Eye	113 "	"	72	"
5.	Diseases of the Ear	31 "	"	13	"
6.	Diseases and Injuries of the Nose and its Cavities	9 "	"	14	"
7.	Diseases and Injuries of the Air-passages	38 "	"	21	"
8.	Diseases and Injuries of the Neck	16 "	"	7	"
9.	Diseases and Injuries of the Chest	18 "	"	2	"
10.	Diseases and Injuries of the Jaws, Teeth, and Gums	42 "	"	35	"
11.	Diseases and Injuries of the Mouth and Throat	57 "	"	44	"
12.	Hernia	59 "	"	21	"
13.	Diseases, Injuries, and Malformations of the Anus and Rectum	47 "	"	15	"
14.	Wounds of the Abdominal Regions	33 "	"	8	"
15.	Diseases and Injuries of the Urinary Organs	133 "	"	96	"
16.	Diseases and Injuries of the Male Genital Organs	54 "	"	29	"
17.	Diseases and Injuries of the Female Genital Organs	86 "	"	53	"
18.	Special Excisions of the Bones and Joints	26 "	"	8	"
19.	Special Amputations	25 "	"	24	"
20.	Affections of the Extremities	32 "	"	25	"
INDEX		Thirty-eight pages, double columns, small type.			

It will be seen from this that all the special departments of surgery have received appropriate attention, the space severally devoted to each being sufficient for its treatment according to the wants of the general practitioner. The book is, therefore, one which will prove of lasting value to the possessor, covering much ground not occupied by the ordinary systematic works, and frequently relieving the necessity of consulting special treatises on particular subjects.

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One of the chief objects of the author has been to induce the student to apply his anatomical knowledge to the more practical points in Surgery, by introducing, in small type, under each of the following subdivisions, such observations as show the necessity of an accurate knowledge of the part under examination.

OSTEOLOGY.

Much time and care have been devoted to this part of the work, the basis of anatomical knowledge. It contains a concise description of the anatomy of the bones, illustrated by ninety-eight wood-cuts, accurately lettered, showing the various markings and processes on each bone. The attachment of the muscles is shown in dotted lines, copied in each case from recent dissections. The articulations of each bone are shown on a new plan, and a method has been adopted by which the hitherto complicated account of the development of the bones is made more simple.

THE ARTICULATIONS.

In this section, the various structures forming the joints are described, a classification of the joints is given, and the anatomy of each carefully described, illustrated by thirty wood-cuts, all of which are taken from, or corrected by, recent dissections.

THE MUSCLES AND FASCIÆ.

In this section, the muscles are described in groups, as in ordinary anatomical works. A series of illustrations, showing the lines of incision necessary in the dissection of the muscles in each region, are introduced, and the muscles are shown in fifty-two wood-cuts. The surgical anatomy of the muscles in connection with fractures, of the tendons or muscles divided in operations, is also described and illustrated.

THE ARTERIES.

The course, relations, peculiarities, and surgical anatomy of each artery are described in this section, together with the anatomy of the regions containing the arteries more especially involved in surgical operations. This part of the work is illustrated by twenty-seven wood-cuts.

THE VEINS

Are described as in ordinary anatomical works, and illustrated by a series of wood-cuts, showing those in each region. The veins of the spine are described and illustrated from the well-known work of Breschet.

THE LYMPHATICS

Are described, and figured in a series of illustrations copied from the elaborate work of Mascagni.

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A concise and accurate description of this important part of anatomy has been given, illustrated by seventy-two wood-cuts, showing the spinal cord and its membranes, the anatomy of the brain in a series of sectional views, the origin, course, and distribution of the cranial, spinal, and sympathetic nerves, and the anatomy of the organs of sense.

THE VISCERA.

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REGIONAL ANATOMY.

The anatomy of the perinæum, of the ischio-rectal region, and of femoral and inguinal herniæ, is described at the end of the work. The region of the neck, the axilla, the bend of the elbow, Scarpa's triangle, and the popliteal space in the section on the arteries. The laryngo-tracheal region, with the anatomy of the trachea and larynx. The regions are illustrated by a large number of wood-cuts.

MICROSCOPICAL ANATOMY.

A brief account of the microscopical anatomy of some of the tissues, and of the various organs, has also been introduced.

In reprinting this work, no additions have been found necessary, but great care has been exercised, under the supervision of a competent professional man, to secure the accuracy so necessary in a work of this character, and to correct various errors which had been passed over in the London edition. Some improvements in the arrangement have also been introduced, among which the Index may be mentioned as greatly more convenient for reference than the original. This Index may be adduced in proof of the completeness of the whole treatise, occupying, as it does, *one hundred columns*, and containing more than SEVEN THOUSAND REFERENCES.

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